ORDER NO. MTV0206172C3

Service Manual

Colour Television

TC-21S15MQ

MX-5Z Chassis

SPECIFICATIONS

Specifications

Power Source :	**AC AUTO 110-240V, 50/60 Hz**
Power Consumption :	**78 W**
	6W (Stand-by condition)
Aerial Impedance :	**75 Ω unbalanced,**
	Coaxial type
Receiving System :	**4 Systems**
	PAL (B, G)
	P NTSC
	M NTSC
	PAL 60Hz
Receiving Channels :	
VHF	**2-12**
UHF	**21-69**
CATV	**S21-S41 (Hyper)**
Intermediate Frequency :	
Video	**38.0 MHz**
Sound	**32.5 MHz (B, G)**
Colour	**33.57 MHz (PAL)**
Video / Audio Terminals :	
FAV In	**Video In 1 Vp-p 75 Ω**
	Audio In Approx. 400mVrms
RAV In	**Video In 1 Vp-p 75 Ω**
	Audio In Approx. 400mVrms
Monitor Out	**Video Out 1 Vp-p 75 Ω**
	Audio Out Approx. 400mVrms
High Voltage :	**28.0kV (±1.0)**
	at zero beam current
Picture Tube :	**A51JXS064X**
	51cm (21 inches)
	Measured diagonally,
	90° deflection
Audio Output :	**3.0W**
Speaker :	**16 Ω**
Dimensions :	**Height : 477.0 mm**
	Width : 518.0 mm
	Depth : 477.7 mm
Mass :	**20.4 kg (Net Weight)**

Note :

Specifications are subject to change without notice. / Mass and dimensions shown are approximate.

⚠ WARNING

This service information is designed for experienced repair technicians only and is not designed for use by the general public.
It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product.
Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

Panasonic®

1. Safety Precautions

1.1. General Guide Lines

1. It is advisable to insert an isolation transformer in the AC supply before servicing this hot chassis.
2. When servicing, observe the original lead dress, especially the lead dress in the high voltage circuits. If a short circuit is found, replace all parts which have been overheated or damaged by the short circuit.
3. After servicing, see to it that all the protective devices such as insulation barriers, insulation papers, shields and isolation R-C combinations, are properly installed.
4. When the receiver is not to be used for a long period of time, unplug the power cord from the AC cord outlet.
5. Potential, as high as 27.0kV is present when this receiver is in operation. Operation of the receiver without the rear cover involves the danger of a shock hazard from the receiver power supply. Servicing should not be attempted by anyone who is not thoroughly familiar with the precautions necessary when working on high voltage equipment. Always discharge the anode of the picture tube to the receiver chassis before handling the tube. After servicing make the following leakage current checks to prevent the customer from being exposed to shock hazards.

1.2. Leakage Current Cold Check

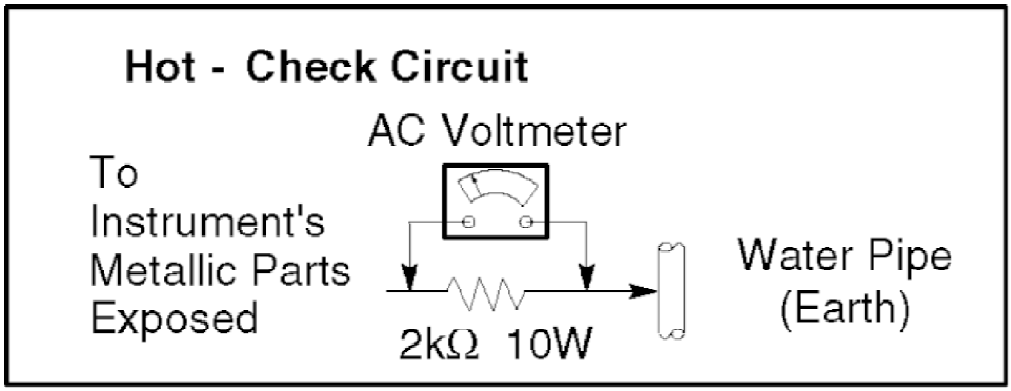
1. Unplug the AC cord and connect a jumper between the two prongs on the plug.

2. Turn on the receiver's power switch. / Measure the resistance value, with an ohmmeter, between the jumper AC plug and each exposed metallic cabinet part on the receiver, such as screw heads, aerials, connectors, control shafts, etc. When the exposed metallic part has a return path to the chassis, the reading should be between 4 M Ω and 20 M Ω . When the exposed metal does not have a return path to the chassis, the reading must be infinite.

1.3. Leakage Current Hot Check (Fig. 1)

1. Plug the AC cord directly into the AC outlet. Do not use an isolation transformer for this check.
2. Check a 2 k Ω non-inductive resistor and an AC/DC current meter, in series with each exposed metallic part on the receiver in turn and an earth such as a water pipe.
   The current from any point should not exceed 0.7 mA peak AC or 2 mA DC. In the case of a measurement being outside of these limits specified, there is a possibility of a shock hazard and the receiver should be repaired and rechecked before it is returned to the customer.

Fig. 1



1.4. X-Radiation

Warning:

The potential sources of X-Radiation in TV set are the EHT section and the picture tube. When using a picture tube test jig for service, ensure that jig is capable of handling 29.0kV without causing X-Radiation.

Note: It is important to use an accurate periodically calibrated high voltage meter.

1. Set the brightness to minimum.
2. Use the remocon to get into Service Mode.

3. Measure the EHT. The meter reading should indicate 28.0±1.0kV. If the meter indication is out of tolerance, immediate service and correction is required to prevent the possibility of premature component failure.
4. To prevent the possibility X-Radiation, it is essential to use the specified picture tube, if service replacement becomes necessary.

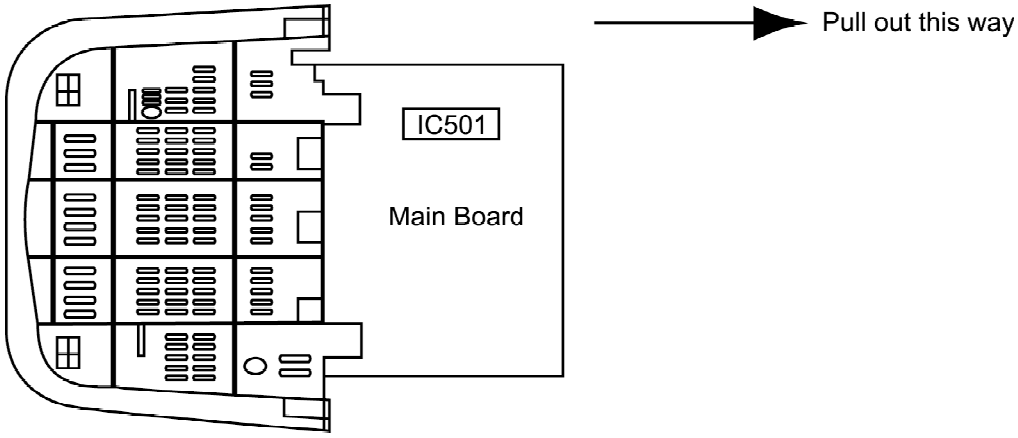
1.5. MX-5Z Chassis Block Diagram

2. Service Hints

2.1. Service Position for E-Board

1. Remove the back cover.
2. Stand the TV set as shown in Fig. 2.
3. Remove the a-board from the TV set by pulling the main board out as shown in Fig. 2.

Fig. 2



2.2. Factory Mode Adjustment

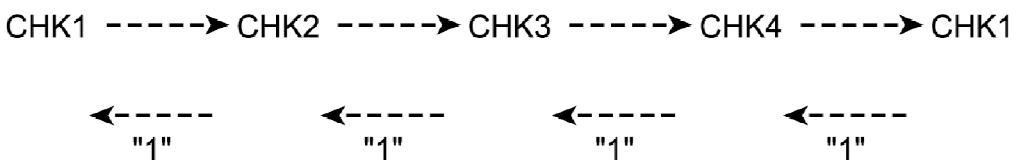
How to set :

To set the Factory mode, press Volume 0 dac on the TV and Timer Setting 30 min. on the remote control and press Volume (-) Down button on the TV together press recall on the remote control. / CHK should appear on right of TV screen. / To move from CHK1 to CHK2 mode, etc. please follow below rotation :

To Set Self-Check :

Press the Volume Down button on TV then press the Off Timer

button on remote control.



2.3. Adjustment for White Balance

Preparation:

1. **Receive the white balance pattern and aging should have been performed over 30 minutes.**
2. **Set the picture menu to DYNAMIC NORMAL.**
3. **Degausse the CRT face.**
4. **Fix the CRT colour analyzer receiver unit to CRT face.**

Adjustment of Low Light.

1. **Adjustment Sub Bright, so that Y = 7.0 ± 1.0 nit.**
2. **Adjustment R-CUT OFF, so that X = 0.245 ± 0.010 nit.**
3. **Adjustment G-CUT OFF, so that Y = 0.235 ± 0.010 nit.**

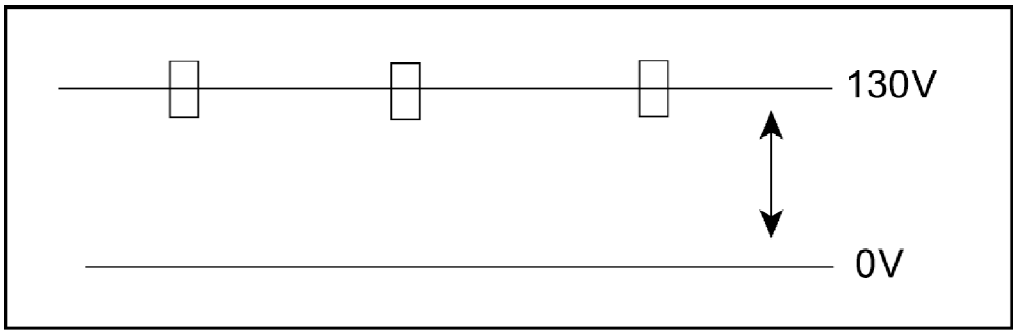
Adjustment of High Light

1. **Adjustment Sub Bright, so that Y = 155 nit.**
2. **Adjustment R-Drive, so that X = 0.270 ± 0.010 nit.**
3. **Adjustment B-Drive, so that Y = 0.275 ± 0.010 nit**

2.4. Adjustment for CRT CUT OFF

Preparation:

1. **Connect the oscilloscope probe to TPL7.**
2. **Screen VR min.**
3. **Set the data Sub Bright, Bright.**
4. **In service Mode at “Bright” dac press [5] in factory mode to enter vertical line and adjust by Volume Down or Up button.**
5. **Adjust “Screen VR” until 1-H Line appears.**



2.5. Adjustment Procedure

Item / Preparation	Adjustment Procedure
+B Voltage 1. Operate the TV set. 2. Set control as follows : Brightness ..... minimum Contrast ..... minimum	Confirm the DC voltage at the indicated test points, as : TPA 12 : 141.0 ± 2.0V TPA 11 : 8 ± 1V TPA 10 : 5 ± 1V TPA 21 : 215 ± 15V
RF AGC 1. Receive a colour bar signal at an RF level of 69 ± 1-2 dBU with 75 Ω loaded. 2. Connect digital multimeter to RF AGC at Tuner.	1. Select “RF AGC” indication in CHK2, on Screen by control at factory mode. 2. Set RF AGC by using remote control Volume (+) or (-) button until voltage AGC at Tuner reaches 2.6 ± (TPA 15 (Tuner point). 3. Increase RF signal strength by 2dB, confirm AGC a voltage drop.
High Voltage 1. Receive the crosshatch pattern. 2. Set to 0 Beam. Screen VR ..... minimum Contrast ..... minimum	1. Connect a DC voltage meter to TPA 12 and confirm voltage is 141.0 ± 2.0V. 2. Connect a high frequency voltmeter to heater and c that voltage reads 6.2 ± 0.24 (VRMS). 3. Normalize the brightness and contrast.
Item / Preparation	**Adjustment Procedure**

NTSC TINT COLOUR

Connect a short jumper between TPA 10 and TPA 20.

Press Main Menu and set system to use AV-NTSC (3.58 MHz).

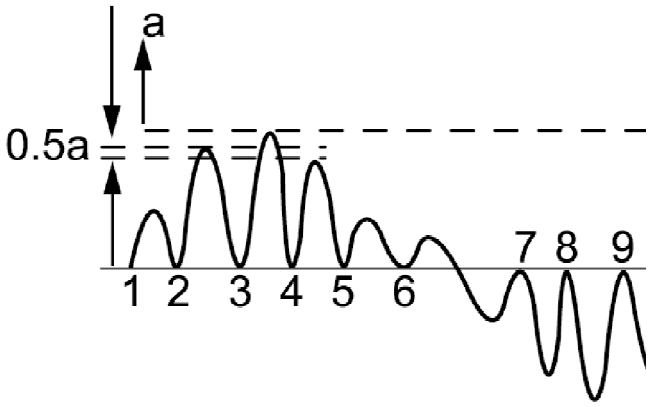
DYNAMIC ..... Normal

Channel CLR Set ..... STD

1. **Adjust Sub-Tint so that No. 2, 3 and 4 becomes leve waveform is similar to Fig. 3.**
2. **Confirm phase at Tint is changes more than ± 30 by control.**
3. **Confirm that colour level is maximum when colour adjusted to maximum position.**

   Note: Use remote control only when adjusting user Sub-Tint.

Fig. 3



2.6. PAL Colour

1. **Receive the PAL B/G studio colour bar pattern and adjust local frequency at the best tuned position.**
2. **Pic Menu: Dynamic Normal, Confirm Contrast - 63, Sub Contrast - 21.**
3. **Channel colour set --------- STD**
4. **“CHK2” and press digit key “5” (AKB OFF) also confirm OSD become blue colour.**
5. **Connect TPA 10 to TPA 20.**
6. **Set (A) to 2.3 ± 0.2V by BRT (CHK2) at measurement point TPL 2 Fig. 4.**

2.7. Adjustment

1. **Connect oscilloscope probe to TPL 2 (G OUT) with 10k Ω series resistor and adjust Contrast so that (B) as in Fig. 4 is 2.6 ± 0.1V.**

2. **Adjust “Sub Colour” so that waveform as in Fig. 4 (1) 2.5 ± 0.1V.**
3. **Connect oscilloscope probe to TPL 1 (R OUT) with 10k Ω series resistor and confirm waveform as in Fig. 5 is (2) 2.7 ± 0.4V.**
4. **Take out jumper TPA 10 and TPA 20.**
5. **Press digit key “5” (AKB ON) and confirm the OSD become white colour.**

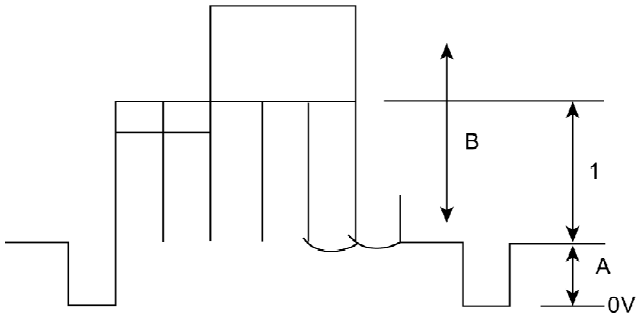


Fig. 4

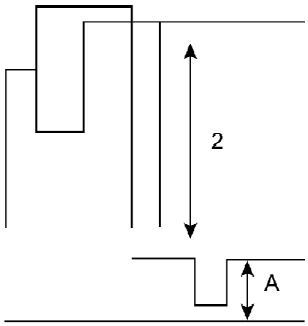


Fig. 5

Before Colour Purity, Convergence and White Balance adjustment are attempted,
V. Height, H. Centre and Focus adjustments must be completed.

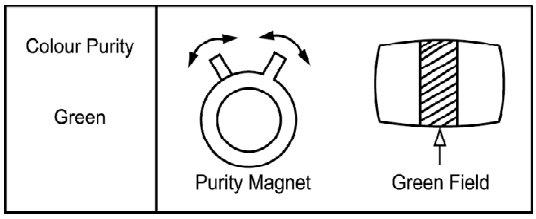
Colour Purity

1. **Set the Brightness and Contrast controls to their maximum positions.**
2. **Operate the TV set for 60 minutes.**
3. **Fully degauss the picture tube by using an external degaussing coil.**
4. **Apply a crosshatch pattern signal and adjust the static convergence magnets to the approximately correct position.**
5. **Receive a black and white signal.**
6. **Set the control as follows: / Red.....minimum / Green.....minimum / Blue.....minimum / Press the Shipping button on the remote control twice to select CRT Adjustment Mode as per Fig. 16 to select low light.**
7. **Loosen the clamp screw for the Deflection Yoke A in Fig. 10 and move the Deflection Yoke as close to the purity magnet as**

possible.

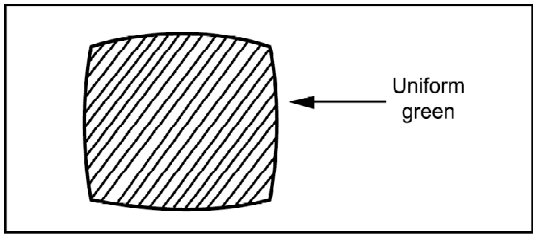
8. Adjust the purity magnetic rings so that a vertical green field is obtained at the centre of the screen.

Fig. 6



9. Slowly push the Deflection Yoke and set it where a uniform green field is obtained.

Fig. 7

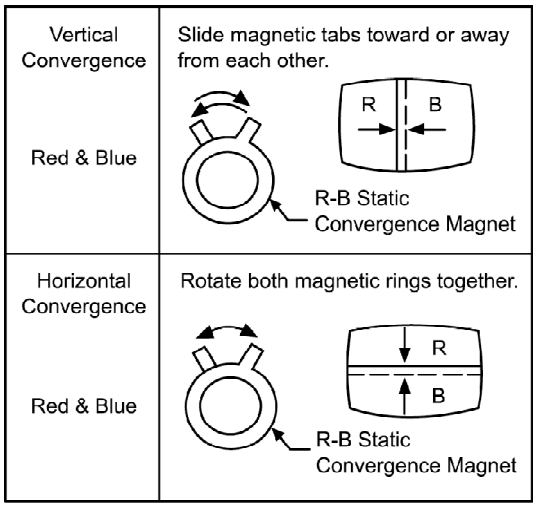


10. Re-adjust the Low Light controls to their correct settings and make sure that a uniform white field is obtained.
11. Tighten the clamp screw A in Fig. 24.

Convergence

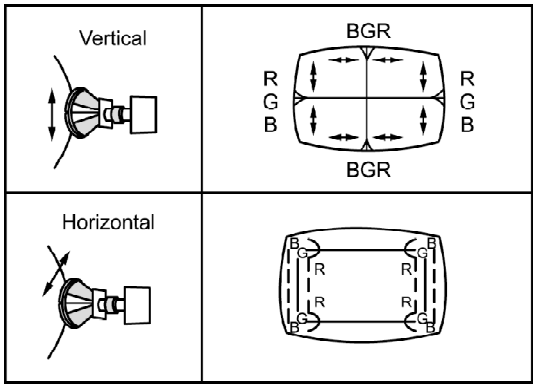
1. Apply a crosshatch pattern signal and Normalize Contrast control to the maximum positions.
2. Adjust Brightness until the grey position of the crosshatch pattern just becomes black.
3. Adjust the Red and Blue line at the centre of the screen by rotating the R-B static.

Fig. 8



4. **Adjust Red and Blue with Green line at centre of the screen by rotating (RB)-G static convergence magnetic rings.**
5. **Lock convergence magnets with silicone sealer.**
6. **Remove the DY wedges and slightly tilt the Deflection Yoke vertically and horizontally to obtain the good overall convergence.**

Fig. 9



7. **Fix the Deflection Yoke by reinserting the DY wedges. Refer to Fig. 10.**
8. **If purity error is found, repeat “Colour Purity” adjustment.**

Fig. 10

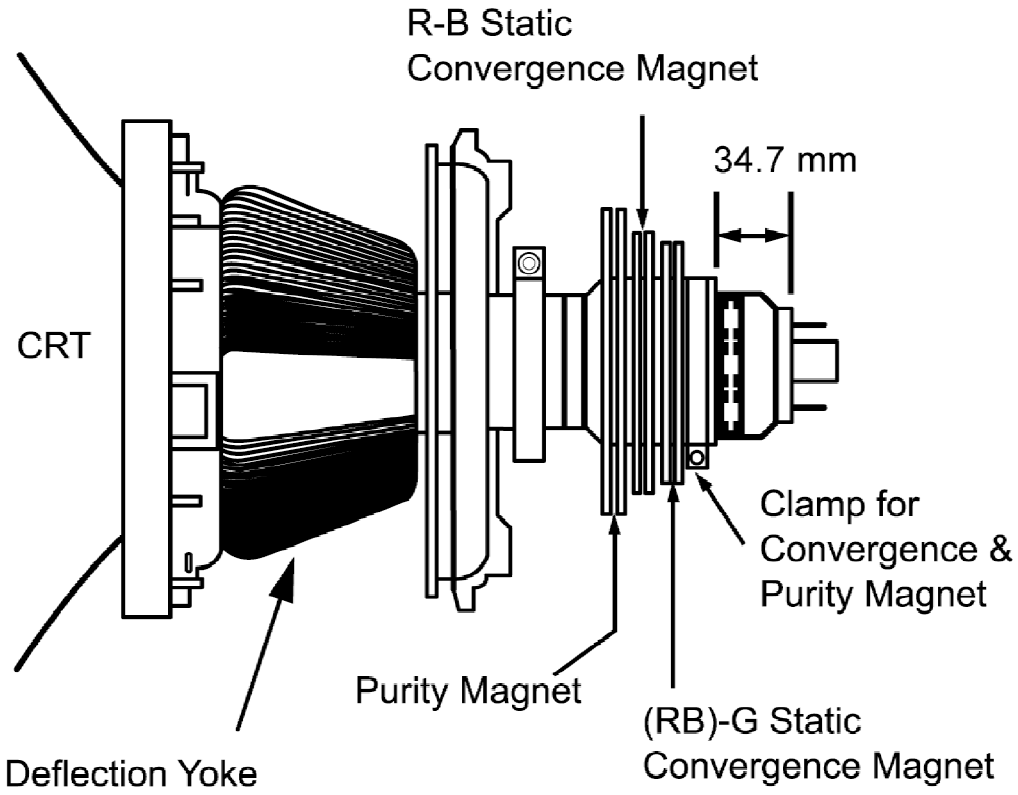
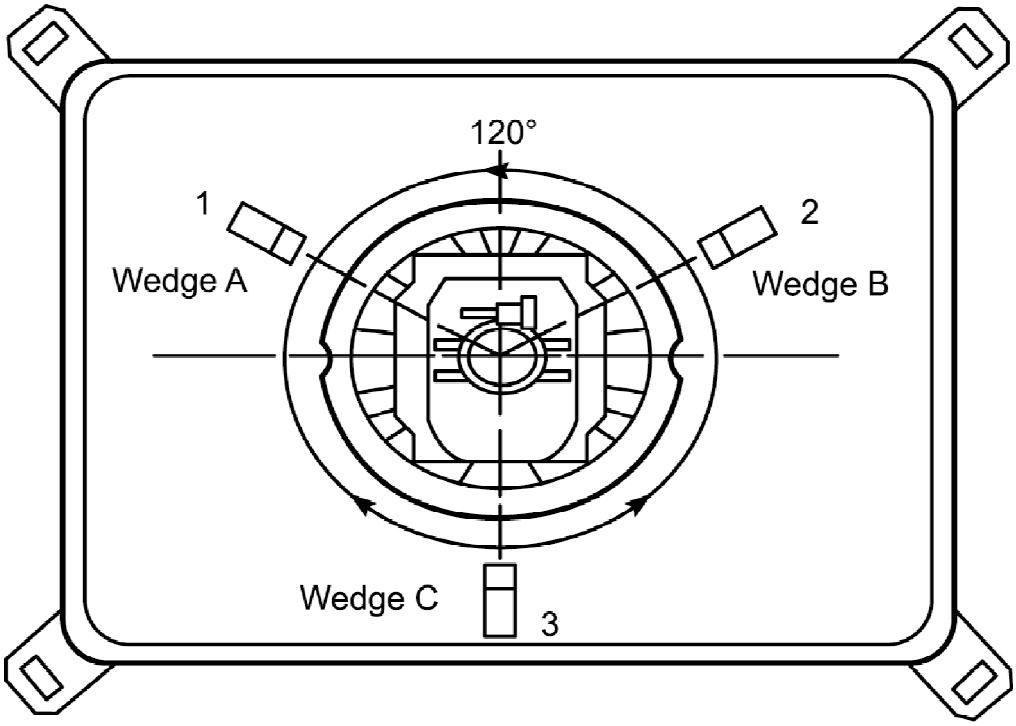


Fig. 11



Notes:

1. Wedge A, B and C should be inserted following the sequence of 1, 2 and 3 shown in Fig. 11.

2. The wedges should be set 120° apart from each other.

3. Be certain that three wedges are firmly fixed and the Deflection Yoke is tightly clamped in place. / Otherwise the Deflection Yoke may shift its position and cause a loss of convergence and purity.

3. Conductor Views (TNP4G198AP)

4. Schematic Diagram

Important Safety Notice

Components identified by ⚠ mark have special characteristics important for safety. When replacing any of these components, use only manufacturer's specified parts.

Notes :

1. Resistor
   All resistors are carbon 1/4W resistors unless marked as follows :
   Unit of resistance is OHM (Ω) (K = 1 000 M = 1 000 000)

◯	Nonflammable	⊠	Metal Oxide
△	Solid	◎	Metal Film
⊿	Wire Wound	⊗	Fuse

2. Capacitor
   All capacitors are ceramic 50V capacitors unless marked as follows :
   Unit of capacitance is μF unless otherwise noted.

⊗	Temperature Compensation	+/-	Electrolytic
Ⓜ	Polyester	NP	Bipolar
ⓜ	Metalized Polyester	Ⓣ	Dipped Tantalum
⊠	Polypropylene	Ⓩ	Z-Type

3. Coil
   Unit of inductance is μH, unless otherwise noted.

4. Test Point
   : Test Point position

5. Earth Symbol
   : Chassis Earth (Cold) : Line Earth (Hot)

6. Voltage Measurement
   Voltage is measured using DC voltmeter.
   Conditions of the measurement are the following :
   Power Source..... AC AUTO 110-240V, 50/60 Hz
   Receiving Signal.....Colour Bar signal (RF)
   All customer's controls.....Maximum positions

7. Number in red circle indicates waveform number.
   (See waveform pattern table.)

8. When arrow mark ( ) is found, connection is easily found from the direction of arrow.

9. : Indicates the major signal flow.

10. This schematic diagram is the latest at the time of printing and subject to change without notice.

Remarks :

The Power Circuit contains a circuit area which uses a seperate power supply to isolate the earth connection.
The circuit is defined by HOT and COLD indications in the schematic diagram.
Take the following precautions :
All circuits, except the Power Circuit are cold.
Precautions :

a. Do not touch the hot part or the hot and cold parts at the same time or you may be shocked.
b. Do not short-circuit the hot and cold circuits or a fuse may blow and parts may break.
c. Do not connect an instrument such as an oscilloscope to the hot and cold circuits simultenously or a fuse may be blow.
   Connect the earth of instruments to the earth connection of the circuit being measured.
d. Make sure to disconnect the power plug before removing the chassis.

4.1. A BOARD

4.1.1. A BOARD (1/4)

4.1.2. A BOARD (2/4)

4.1.3. A BOARD (3/4)

4.1.4. A BOARD (4/4)

4.2. L BOARD

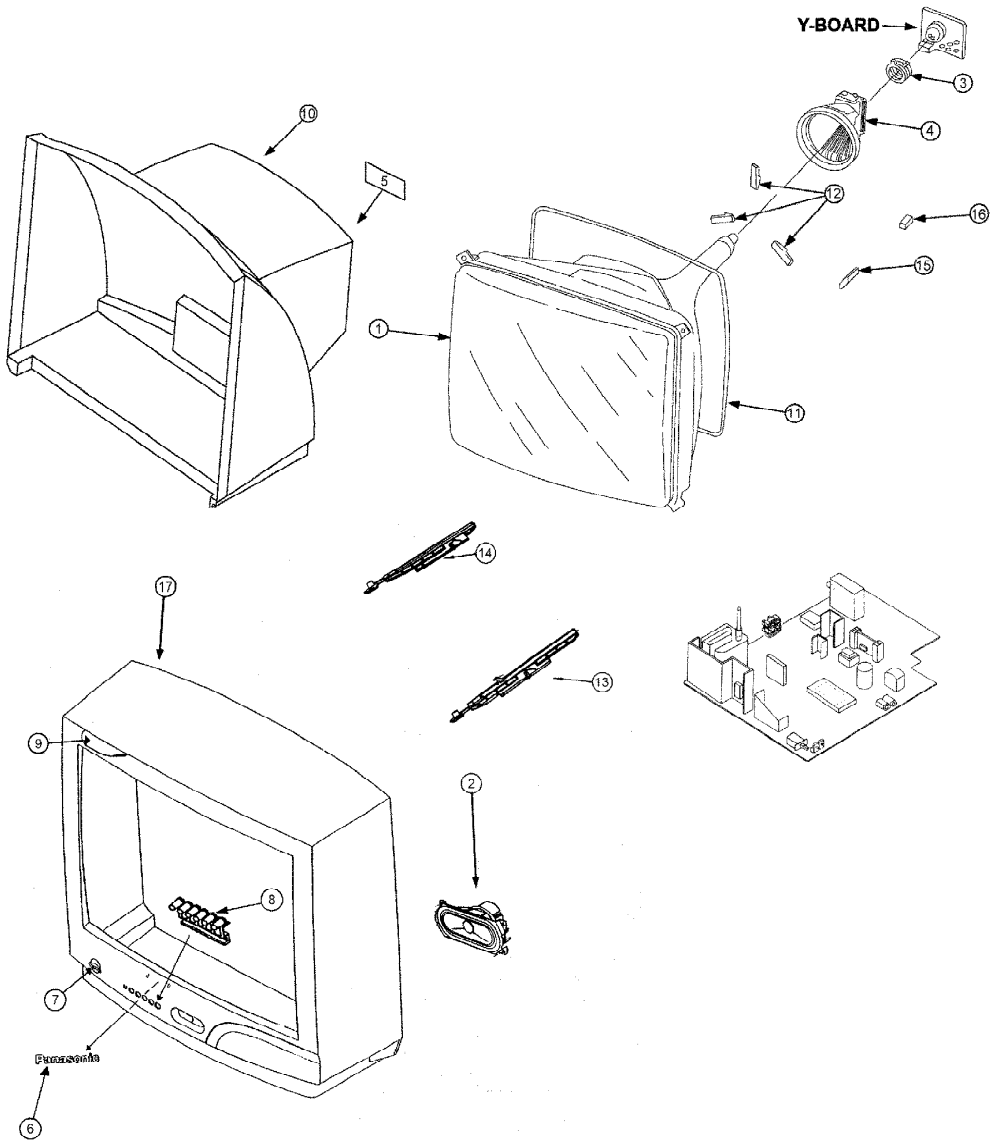
4.2.1. L BOARD (1/2)

4.2.2. L BOARD (2/2)

5. Parts Location

PARTS LOCATION

Note: The number on mechanical parts indicates Ref. No. of Replacement Parts List.



6. Replacement Parts List

Important Safety Notice

Components identified by ⚠ mark have special characteristics important for safety.
When replacing any of these components, use manufacturer's specified parts.

Note : Printed circuit board assembly with "NLA" is no longer available after production discontinuation of the complete set.

Abbreviation of part name and description

1. Resistor

Example :
ERD25TJ104 **C** 100KΩ, **J**, 1/4W
Type Allowance

Type	Allowance
C : Carbon	F : ± 1%
F : Fuse	G : ± 2%
M : Metal Oxide Metal Film	J : ± 5% K : ± 10%
S : Solid	M : ± 20%
W : Wire Wound	

2. Capacitor

Example :
ECKF1H103ZF **C** 0.01µF, **Z**, 50V
Type Allowance

Type	Allowance
C : Carbon	C : ± 0.25pF
E : Electrolytic	D : ± 0.5pF
P : Polyester Polypropylene	F : ± 1pF G : ± 3%
T : Tantalum	J : ± 5%
	K : ± 10%
	L : ± 15%
	M : ± 20%
	P : ± 100%, -0%
	Z : ± 80%, -20%

6.1. Replacement Parts List

Ref. No.	Part No.	Part Name & Description	Remarks
1	A51JXS064X	PICTURE TUBE	⚠
2	EASG12D553A2	SPEAKER	
3	JH291U-009	CONVERGENCE YOKE	
4	KDY3NKE65F	DEFLECTION YOKE	⚠
5	TBM4G0843	MODEL NAME PLATE	⚠
6	TBM4G3001	PANASONIC BADGE	
7	TBX4G84900	POWER BUTTON	
8	TBX4G85000	6 KEY BUTTON	
	TES4G206	COIL SPRING	
	THT4G1007R	CRT SCREW	
9	TKP4G11296	MODEL BADGE	
10	TKU4G2010	BACK COVER	
11	TLK4G9012A	DEGAUSSING COIL	⚠
12	TMM4G503	RUBBER WEDGE	
13	TMZ4G9805	CHASSIS RAIL (L)	
14	TMZ4G9806-3	CHASSIS RAIL (R)	
NLA	TNP4G198AP	A BOARD	⚠
NLA	TNP4G199AB	L BOARD	⚠
	TNQ4G0401	REMOTE CONTROL	
	TPC4G42714	CARTON	
	TPE4G14003	LAMI BAG	
	TPE4G14025	SET COVER	
	TQB4G3150	FAN BAG	

Ref. No.	Part No.	Part Name & Description	Remarks
15	TSM10032-3	MAGNET	
16	TSN63115-4	PURITY MAGNET	
	TSX4G113F1	AC POWER CORD	⚠
17	TXFKY01WT3N	CABINET ASSY	
	TXFPD11JL2S	CUSHION (TOP)	
	TXFPD12JL2S	CUSHION (BOTTOM)	
	RESISTORS		
R003	ERJ6GEYJ100	M 10OHM,J,1/10W	
R004	ERG3FJ822H	M 8.2KOHM,J, 3W	
R006	ERJ6GEYJ273	M 27KOHM,J,1/10W	
R007	ERJ6GEYJ302	M 3KOHM,J,1/10W	
R008	ERJ6GEYJ681	M 680OHM,J,1/10W	
R011	ERJ6GEYJ103	M 10KOHM,J,1/10W	
R012	ERJ6GEYJ332	M 3.3KOHM,J,1/10W	
R021	ERJ6GEYJ273	M 27KOHM,J,1/10W	
R022	ERJ6GEYJ473	M 47KOHM,J,1/10W	
R116	ERJ6GEYJ222	M 2.2KOHM,J,1/10W	
R117	ERJ6GEYJ682	M 6.8KOHM,J,1/10W	
R120	ERJ6GEYJ680	M 68OHM,J,1/10W	
R121	ERJ6GEYJ122	M 1.2KOHM,J,1/10W	
R122	ERJ6GEYJ470	M 47OHM,J,1/10W	
R123	ERJ6GEYJ472	M 4.7KOHM,J,1/10W	
R124	ERJ6GEYJ122	M 1.2KOHM,J,1/10W	
R138	ERJ6GEYJ102	M 1KOHM,J,1/10W	
R182	ERJ6GEYJ221	M 220OHM,J,1/10W	
R351	ERJ6ENF1001	M 1KOHM, 1/10W	
R352	ERJ6ENF1001	M 1KOHM, 1/10W	
R353	ERJ6ENF1001	M 1KOHM, 1/10W	
R354	ERJ6ENF7870	M 787OHM, 1/10W	
R355	ERJ6ENF7870	M 787OHM, 1/10W	
R356	ERJ6ENF7870	M 787OHM, 1/10W	
R363	ERC12GK222	S 2.2KOHM,K, 1/2W	
R364	ERC12GK222	S 2.2KOHM,K, 1/2W	
R365	ERC12GK222	S 2.2KOHM,K, 1/2W	
R369	ERJ6GEYJ103	M 10KOHM,J,1/10W	
R374	ERQ12AJ181P	F 180OHM,J, 1/2W	
R401	ERDS2TJ1R5	C 1.5OHM,J, 1/4W	
R402	ERJ6GEYJ103	M 10KOHM,J,1/10W	
R403	ERJ6GEYJ182	M 1.8KOHM,J,1/10W	
R624	ERJ6GEYJ103	M 10KOHM,J,1/10W	
R625	ERJ6GEYJ222	M 2.2KOHM,J,1/10W	
R626	ERJ6GEYJ104	M 100KOHM,J,1/10W	
R627	ERJ6GEYJ683	M 68KOHM,J,1/10W	
R628	ERJ6GEYJ563	M 56KOHM,J,1/10W	
R629	ERJ6GEYJ154	M 150KOHM,J,1/10W	
R630	ERJ6ENF1802	M 18KOHM, 1/10W	
R631	ER050CKF5603	M 560KOHM,F, 1/2W	
R632	ERJ6GEYJ750	M 75OHM, 1/10W	
R633	ERJ6GEYJ470	M 47OHM,J,1/10W	
R634	ERJ6GEYJ822	M 8.2KOHM,J,1/10W	
R635	ERJ6GEYJ561	M 560OHM,J,1/10W	
R636	ERJ6GEYJ562	M 5.6KOHM,J,1/10W	
R637	ERJ6GEYJ473	M 47KOHM,J,1/10W	
R638	ERJ6GEYJ391	M 390OHM,J,1/10W	

Ref. No.	Part No.	Part Name & Description	Remarks
R639	ERJ6GEYJ101	M 100OHM,J,1/10W	
R640	ERJ6GEYJ181	M 180OHM,J,1/10W	
R641	ERJ6GEY0R00	M 0OHM,J,1/10W	
R642	ERJ6GEYJ332	M 3.3KOHM,J,1/10W	
R643	ERJ6GEYJ272	M 2.7KOHM,J,1/10W	
R655	ERJ6GEYJ103	M 10KOHM,J,1/10W	
R660	ERJ6GEYJ274	M 270KOHM,J,1/10W	
R661	ERJ6GEYJ103	M 10KOHM,J,1/10W	
R662	ERJ6GEYJ333	M 33KOHM,J,1/10W	
R801	ERF5ZK2R2	W 2.2OHM,K, 5W	⚠
R806	ERJ6GEYJ222	M 2.2KOHM,J,1/10W	
R807	ERJ6GEYJ152	M 1.5KOHM,J,1/10W	
R809	ERX12SJR39E	M 0.39OHM,J, 1/2W	
R811	ERJ6GEYJ681	M 680OHM,J,1/10W	
R812	ERD75TAJ825	C 8.2MOHM,J, 3/4W	
R814	ERJ6GEYJ332	M 3.3KOHM,J,1/10W	
R817	ERG3FJ183H	M 18KOHM,J, 3W	
R819	ERDS1TJ220	C 22OHM,J, 1/2W	
R821	ERG2SJS333H	M 33KOHM,J, 2W	
R824	ERDS1TJ624	C 620KOHM,J, 1/2W	
R825	ERJ6GEYJ473	M 47KOHM,J,1/10W	
R832	ERDS1TJ152	C 1.5KOHM,J, 1/2W	
R835	ERX12SJR39E	M 0.39OHM,J, 1/2W	
R850	ERQ12HKR68P	F 0.68OHM,K, 1/2W	
R856	ERQ12HJ1R5P	F 1.5OHM,J, 1/2W	
R857	ERQ12HKR82P	F 0.82OHM,K, 1/2W	
R864	ERJ6GEYJ103	M 10KOHM,J,1/10W	
R866	ERJ6GEYJ472	M 4.7KOHM,J,1/10W	
R868	ERJ6GEYJ242	M 2.4KOHM,J,1/10W	
R870	ER0S2CHF2201	M 2.2KOHM,F, 1/4W	
R871	ERDS1TJ223	C 22KOHM,J, 1/2W	
R1016	ERJ6ENF1651	M1.65KOHM, 1/10W	
R1017	ERJ6ENF2151	M2.15KOHM, 1/10W	
R1018	ERJ6ENF3091	M3.09KOHM, 1/10W	
R1019	ERJ6ENF4421	M4.42KOHM, 1/10W	
R1020	ERJ6ENF7501	M 7.5KOHM, 1/10W	
R1021	ERJ6ENF1871	M1.87KOHM, 1/10W	
R1022	ERJ6GEYJ100	M 10OHM,J,1/10W	
R1101	ERJ6GEYJ332	M 3.3KOHM,J,1/10W	
R1104	ERJ6GEYJ562	M 5.6KOHM,J,1/10W	
R1105	ERJ6GEYJ562	M 5.6KOHM,J,1/10W	
R1106	ERJ6GEYJ102	M 1KOHM,J,1/10W	
R1108	ERJ6GEYJ101	M 100OHM,J,1/10W	
R1109	ERJ6GEYJ101	M 100OHM,J,1/10W	
R1117	ERJ6GEYJ471	M 470OHM,J,1/10W	
R1120	ERJ6GEYJ432	M 4.3KOHM,J,1/10W	
R1122	ERJ6GEYJ332	M 3.3KOHM,J,1/10W	
R1124	ERJ6GEY0R00	M 0OHM,J,1/10W	
C409	ECA1HM330B	E 33UF, 50V	
C502	ECKR2H821KB5	C 820PF, K,500V	
C504	ECJ2VB1H681K	C 680PF, K, 50V	
C506	L5SL4B100D	C 10PF, 500V	
C511	ECA1VM101B	E 100UF, 35V	
C519	ECA160V33UE	E 33UF, 160V	

Ref. No.	Part No.	Part Name & Description	Remarks
C520	ECA0JM221B	E 220UF, 6.3V	
C552	ECA2EM100B	E 10UF, 250V	
C555	ECKR2H471KB5	C 470PF, K,500V	
C558	ECA2CMR47B	E 0.47UF, 160V	
C559	ECWH16103JVB	P 0.01UF,J,1.6KV	
C560	ECQM4333JZ	P 0.033UF, 400V	
C561	ECKW3D391JBR	C 390PF, J, 2KV	
C562	ECKW3D471JBN	C 470PF, J, 2KV	
C563	ECWF2394JSR	P 0.39UF, J,250V	
C564	ECWH16152JVB	P 1500PF,J,1.6KV	
C565	ECQP1H183JZ	P 0.018UF, J, 50V	
C570	ECJ2VC1H560J	C 56PF, J, 50V	
C601	ECEA1CKA101	E 100UF, 16V	
C602	ECUX1H104KBX	C 0.1UF, K, 50V	
C603	ECJ2VB1H472K	C 4700PF, K, 50V	
C604	ECQV1H224JL	P 0.22UF, J, 50V	
C605	ECQV1H224JL	P 0.22UF, J, 50V	
C606	ECJ2VC1H222J	C 2200PF, J, 50V	
C607	ECEA1HKA010	E 1UF, 50V	
C608	ECEA1HKA2R2	E 2.2UF, 50V	
C609	ECUX1H104KBX	C 0.1UF, K, 50V	
C610	ECJ2VB1H103J	C 0.01UF, 50V	
C611	ECEA1HKAR22	E 0.22UF, 50V	
C612	ECJ2VB1H472K	C 4700PF, K, 50V	
C613	ECJ2VB1H472K	C 4700PF, K, 50V	
C614	ECQV1H104JL	P 0.1UF, J, 50V	
C615	ECQV1H224JL	P 0.22UF, J, 50V	
C616	ECJ2VB1H392K	C 3900PF, K, 50V	
C617	ECEA1CKA100	E 10UF, 16V	
C618	ECKR1H681KB5	C 680PF, K, 50V	
C620	ECJ2VC1H470J	C 47PF, J, 50V	
C621	ECJ2VB1H471K	C 470PF, K, 50V	
C622	ECJ2VF1H104Z	C 0.1UF, Z, 50V	
C623	ECJ2VC1H270J	C 27PF, J, 50V	
C624	ECEA1CKA100	E 10UF, 16V	
C625	ECA0JM221B	E 220UF, 6.3V	
C627	ECJ2YB1H473K	C 0.047UF, K, 50V	
C628	ECJ2YB1H473K	C 0.047UF, K, 50V	
C629	ECUX1H104KBX	C 0.1UF, K, 50V	
C631	ECJ2VB1H222K	C 2200PF, K, 50V	
C633	ECJ2ZF1C105Z	C 1UF, Z, 16V	
C634	ECJ2ZF1C105Z	C 1UF, Z, 16V	
C635	ECJ2VF1H104Z	C 0.1UF, Z, 50V	
C636	ECEA1CKA101	E 100UF, 16V	
C639	ECA1HM220B	E 22UF, 50V	
C641	ECJ2VC1H100C	C 10PF, C, 50V	
C653	ECEA1CKA100	E 10UF, 16V	
C660	ECQV1H105JM	P 1UF, J, 50V	
C801	ECKCNA331MB7	C 330PF, M,	⚠
C802	ECKCNA152ME7	C 1500PF, M,	⚠
C803	ECKWAE472ZE	C 4700PF, Z,	
C805	ECQU2A224BN9	P 0.22UF, 250V	
C806	ECKWAE472ZE	C 4700PF, Z,	
C807	ECKWAE472ZE	C 4700PF, Z,	

[illegible]	[illegible]	[illegible]	

Ref. No.	Part No.	Part Name & Description	Remarks
C808	ECQB1H681JF	P 680PF, J, 50V	
C809	ECKWAE472ZE	C 4700PF, Z,	
C811	F2A1V330A085	E 33UF, 35V	
L501	ELH5L4115	LINEARITY COIL	
L550	EXCELDR25V	CORE	
L560	EXCELDR35V	CORE	
L619	TSK1045	BEAD CORE	
L620	TSK1045	BEAD CORE	
L621	EXCELSA39V	BEAD CORE	
L801	TLP4GD014P	LINE FILTER	⚠
L820	EXCELDR35C	BEAD CORE	
L852	G0A101EA0008	PEAKING COIL	
L856	TLTACT1R5K	PEAKING COIL	
L857	TLTACT1R5K	PEAKING COIL	
L1101	TALV35VB331K	PEAKING COIL	
	TRANSFORMERS		
T552	ZTFN33001A	FLYBACK TRANS	⚠
T553	ETH19Y70AY	H DRIVE TRANS	⚠
T801	ETS35AG166AD	SWITCHING TRANS	⚠
	DIODES		
D002	MTZJ16A	ZENER DIODE	
D003	MTZJ16A	ZENER DIODE	
D004	MTZJ30D	ZENER DIODE	
D005	MTZJ30D	ZENER DIODE	
D011	MA152KTX	DIODE	
D354	MA152KTX	DIODE	
D355	MA152KTX	DIODE	
D356	MA152KTX	DIODE	
D360	ERA22-04	DIODE	
D361	ERA22-04	DIODE	
D362	ERA22-04	DIODE	
D363	MA152KTX	DIODE	
D365	MTZJ10C	ZENER DIODE	
D375	MA152KTX	DIODE	
D402	B0HAJP000015	DIODE	
D403	MTZJ33B	ZENER DIODE	
D511	MA4108J	DIODE	
D512	MA171	DIODE	
D520	MA152KTX	DIODE	
D551	MA3047HTX	DIODE	
D552	B0HAJP000015	DIODE	
D555	MA152KTX	DIODE	
D556	ERB06-15	DIODE	
D557	TVSRU2AM	DIODE	
D558	MA185	DIODE	
D603	MA152KTX	DIODE	
D606	MA152KTX	DIODE	
D630	MAZ30560HL	DIODE	
D660	MA3X152E0L	DIODE	
D801	TAP4GA0005	POSISTOR	⚠
D802	D4SB80	DIODE	
D804	AG01Z	DIODE	
D805	AG01Z	DIODE	

Ref. No.	Part No.	Part Name & Description	Remarks
D806	ERZV10V621CS	VARISTOR	⚠
D807	TLP721FD4GR	PHOTO COUPLER	⚠
D808	MTZJ12B	ZENER DIODE	
D811	AM01A	DIODE	
D814	MA182	DIODE	
D816	AG01Z	DIODE	
D820	ERA22-10	DIODE	
D824	MA4068M	DIODE	
D831	RU4AMLF-M1	DIODE	
D837	S3L60P1520	DIODE	
D855	AG01Z	DIODE	
D856	RN1ZLF-A1	DIODE	
D862	MTZJ10A	ZENER DIODE	
JA3	ERJ6GEY0R00	M 0OHM,J,1/10W	
JA4	ERJ6GEY0R00	M 0OHM,J,1/10W	
JA5	ERJ6GEY0R00	M 0OHM,J,1/10W	
JA7	ERJ6GEY0R00	M 0OHM,J,1/10W	
JA8	ERJ6GEY0R00	M 0OHM,J,1/10W	
JA9	ERJ6GEY0R00	M 0OHM,J,1/10W	
JA10	ERJ6GEY0R00	M 0OHM,J,1/10W	
JA11	ERJ6GEY0R00	M 0OHM,J,1/10W	
JA12	ERJ6GEY0R00	M 0OHM,J,1/10W	
JA14	ERJ6GEY0R00	M 0OHM,J,1/10W	
JA15	ERJ6GEY0R00	M 0OHM,J,1/10W	
JA17	ERJ6GEY0R00	M 0OHM,J,1/10W	
JA18	ERJ6GEY0R00	M 0OHM,J,1/10W	
JA20	ERJ6GEY0R00	M 0OHM,J,1/10W	
JA27	ERJ6GEY0R00	M 0OHM,J,1/10W	
JA30	ERJ6GEY0R00	M 0OHM,J,1/10W	
JA31	ERJ6GEY0R00	M 0OHM,J,1/10W	
JA32	ERJ6GEY0R00	M 0OHM,J,1/10W	
JA33	ERJ6GEY0R00	M 0OHM,J,1/10W	
JK351	330550044K2F	CRT SOCKET	⚠
JK3001	TJB18637	AV TERMINAL	
JK3101	TJB4G605	FRONT AV TERMINAL	
JS002	ERJ6GEY0R00	M 0OHM,J,1/10W	
JS102	ERJ6GEY0R00	M 0OHM,J,1/10W	
JS551	ERJ6GEY0R00	M 0OHM,J,1/10W	
JS554	ERJ6GEY0R00	M 0OHM,J,1/10W	
JS557	ERJ6GEY0R00	M 0OHM,J,1/10W	
JS558	ERJ6GEY0R00	M 0OHM,J,1/10W	
JS601	ERJ6GEY0R00	M 0OHM,J,1/10W	
JS628	ERJ6GEY0R00	M 0OHM,J,1/10W	
JS629	ERJ6GEY0R00	M 0OHM,J,1/10W	
JS630	ERJ6GEY0R00	M 0OHM,J,1/10W	
JS678	ERJ6GEY0R00	M 0OHM,J,1/10W	
JS680	ERJ6GEY0R00	M 0OHM,J,1/10W	
JS684	ERJ6GEY0R00	M 0OHM,J,1/10W	
JS850	ERJ6GEY0R00	M 0OHM,J,1/10W	
JS871	ERJ6GEY0R00	M 0OHM,J,1/10W	
JS2302	ERJ6GEY0R00	M 0OHM,J,1/10W	
JS2310	ERJ6GEY0R00	M 0OHM,J,1/10W	
JS2420	ERJ6GEY0R00	M 0OHM,J,1/10W	

Ref. No.	Part No.	Part Name & Description	Remarks
JS3011	ERJ6GEY0R00	M 0OHM,J,1/10W	
JS3012	ERJ6GEY0R00	M 0OHM,J,1/10W	
JS3018	ERJ6GEY0R00	M 0OHM,J,1/10W	
JS3130	ERJ6GEY0R00	M 0OHM,J,1/10W	
JS3131	ERJ6GEY0R00	M 0OHM,J,1/10W	
JS3132	ERJ6GEY0R00	M 0OHM,J,1/10W	
JS3134	ERJ6GEY0R00	M 0OHM,J,1/10W	
JS3140	ERJ6GEY0R00	M 0OHM,J,1/10W	
JS3145	ERJ6GEY0R00	M 0OHM,J,1/10W	
L5	TJS3A9670	6P CONNECTOR	
L8	TJS3A9670	6P CONNECTOR	
S801	ESB92DA1B	SWITCH	⚠
S1001	EVQ11G05R	SWITCH	
S1002	EVQ11G05R	SWITCH	
S1003	EVQ11G05R	SWITCH	
S1004	EVQ11G05R	SWITCH	
S1005	EVQ11G05R	SWITCH	
S1006	EVQ11G05R	SWITCH	
TNR001	ENV59D89G3	TUNER	⚠
X101	K2965M	SAW FILTER	
X180	EFCS5M7MW3	CERAMIC FILTER	
X601	H0D120500006	CRYSTAL OSCILLATOR	
R404	ERJ6ENF2701	M 2.7KOHM, 1/10W	
R405	ERJ6GEYJ222	M 2.2KOHM,J,1/10W	
R407	ERDS1TJ331	C 330OHM,J, 1/2W	
R408	ERJ6GEY0R00	M 0OHM,J,1/10W	
R409	ERJ6GEYJ823	M 82KOHM,J,1/10W	
R411	ERJ6GEYJ182	M 1.8KOHM,J,1/10W	
R412	ERJ6GEYJ332	M 3.3KOHM,J,1/10W	
R415	ERJ6GEYJ431	M 430OHM,J,1/10W	
R416	ERX12SJR82V	M 0.82OHM,J, 1/2W	
R417	ERDS1TJ1R0	C 1OHM,J, 1/2W	
R420	ERDS2TJ182	C 1.8KOHM,J, 1/4W	
R443	ERDS1TJ152	C 1.5KOHM,J, 1/2W	
R444	ERG1SJ182E	M 1.8KOHM,J, 1W	
R445	ERJ6GEYJ473	M 47KOHM,J,1/10W	
R446	ERJ6GEYJ473	M 47KOHM,J,1/10W	
R447	ERJ6GEYJ472	M 4.7KOHM,J,1/10W	
R448	ERJ6GEYJ242	M 2.4KOHM,J,1/10W	
R449	ERJ6GEYJ152	M 1.5KOHM,J,1/10W	
R502	ERJ6GEYJ182	M 1.8KOHM,J,1/10W	
R503	ERJ6GEY0R00	M 0OHM,J,1/10W	
R504	ERG2SJ682E	M 6.8KOHM,J, 2W	
R507	ERJ6GEYJ101	M 100OHM,J,1/10W	
R508	ERG3FJ102	M 1KOHM,J, 3W	
R509	ERG3FJ122	M 1.2KOHM,J, 3W	
R511	ERJ6ENF2201	M 2.2KOHM, 1/10W	
R512	ERJ6ENF1911	M1.91KOHM, 1/10W	
R513	ERQ14AJ100P	F 10OHM,J, 1/4W	
R520	ERX12SJ3R0E	M 3OHM,J, 1/2W	
R521	ERX12SJ3R0E	M 3OHM,J, 1/2W	
R522	ERJ6GEYJ123	M 12KOHM,J,1/10W	
R523	ERJ6GEYJ103	M 10KOHM,J,1/10W	
R524	ERJ6GEYJ104	M 100KOHM,J,1/10W	

[illegible]	[illegible]	[illegible]	

Ref. No.	Part No.	Part Name & Description	Remarks
R525	ERJ6GEYJ392	M 3.9KOHM,J,1/10W	
R553	ERJ6GEYJ223	M 22KOHM,J,1/10W	
R555	ERQ14AJ2R0E	F 2.0OHM,J, 1/4W	
R557	ER050CKF1473	M 147KOHM,F, 1/2W	
R558	ERDS2TJ223	C 22KOHM,J, 1/4W	
R559	ERQ1CKPR68S	F 0.68OHM,K, 1W	
R560	ERG1SJ102E	M 1KOHM,J, 1W	
R601	ERJ6GEYJ153	M 15KOHM,J,1/10W	
R602	ERJ6ENF3001	M 3KOHM, 1/10W	
R603	ERJ6GEYJ393	M 39KOHM,J,1/10W	
R604	ERJ6GEYJ101	M 100OHM,J,1/10W	
R605	ERJ6GEYJ101	M 100OHM,J,1/10W	
R606	ERJ6GEYJ101	M 100OHM,J,1/10W	
R607	ERJ6GEYJ103	M 10KOHM,J,1/10W	
R608	ERJ6GEYJ332	M 3.3KOHM,J,1/10W	
R609	ERJ6GEYJ332	M 3.3KOHM,J,1/10W	
R610	ERJ6GEYJ103	M 10KOHM,J,1/10W	
R611	ERJ6GEYJ472	M 4.7KOHM,J,1/10W	
R612	ERJ6GEYJ102	M 1KOHM,J,1/10W	
R613	ERJ6GEYJ391	M 390OHM,J,1/10W	
R614	ERJ6GEYJ392	M 3.9KOHM,J,1/10W	
R615	ERJ6GEYJ102	M 1KOHM,J,1/10W	
R616	ERJ6GEYJ392	M 3.9KOHM,J,1/10W	
R617	ERJ6GEYJ181	M 180OHM,J,1/10W	
R618	ERJ6GEYJ184	M 180KOHM,J,1/10W	
R619	ERJ6GEYJ121	M 120OHM,J,1/10W	
R620	ERJ6GEYJ121	M 120OHM,J,1/10W	
R621	ERJ6GEYJ103	M 10KOHM,J,1/10W	
R622	ERJ6GEYJ103	M 10KOHM,J,1/10W	
R623	ERJ6GEYJ331	M 330OHM,J,1/10W	
R1125	ERDS2TJ560	C 56OHM,J, 1/4W	
R1130	ERJ6GEYJ101	M 100OHM,J,1/10W	
R1131	ERJ6GEYJ101	M 100OHM,J,1/10W	
R1132	ERJ6GEYJ101	M 100OHM,J,1/10W	
R1140	ERJ6ENF1002	M 10KOHM, 1/10W	
R1141	ERJ6GEYJ562	M 5.6KOHM,J,1/10W	
R2022	ERJ6GEYJ104	M 100KOHM,J,1/10W	
R2301	ERJ6GEYJ562	M 5.6KOHM,J,1/10W	
R2304	ERDS2TJ222	C 2.2KOHM,J, 1/4W	
R2305	ERQ2CJP6R8S	F 6.8OHM, J, 2W	
R2310	ERDS2TJ1R0	C 1OHM,J, 1/4W	
R2318	ERJ6GEYJ332	M 3.3KOHM,J,1/10W	
R2319	ERJ6GEYJ102	M 1KOHM,J,1/10W	
R2320	ERJ6GEYJ102	M 1KOHM,J,1/10W	
R2321	ERJ6GEYJ153	M 15KOHM,J,1/10W	
R2322	ERJ6GEYJ682	M 6.8KOHM,J,1/10W	
R2380	ERJ6GEYJ151	M 150OHM,J,1/10W	
R2381	ERJ6GEYJ102	M 1KOHM,J,1/10W	
R2382	ERJ6GEYJ102	M 1KOHM,J,1/10W	
R2383	ERJ6GEYJ103	M 10KOHM,J,1/10W	
R2402	ERJ6GEYJ333	M 33KOHM,J,1/10W	
R2403	ERJ6GEYJ154	M 150KOHM,J,1/10W	
R2404	ERJ6GEYJ681	M 680OHM,J,1/10W	
R2405	ERJ6GEYJ684	M 680KOHM,J,1/10W	

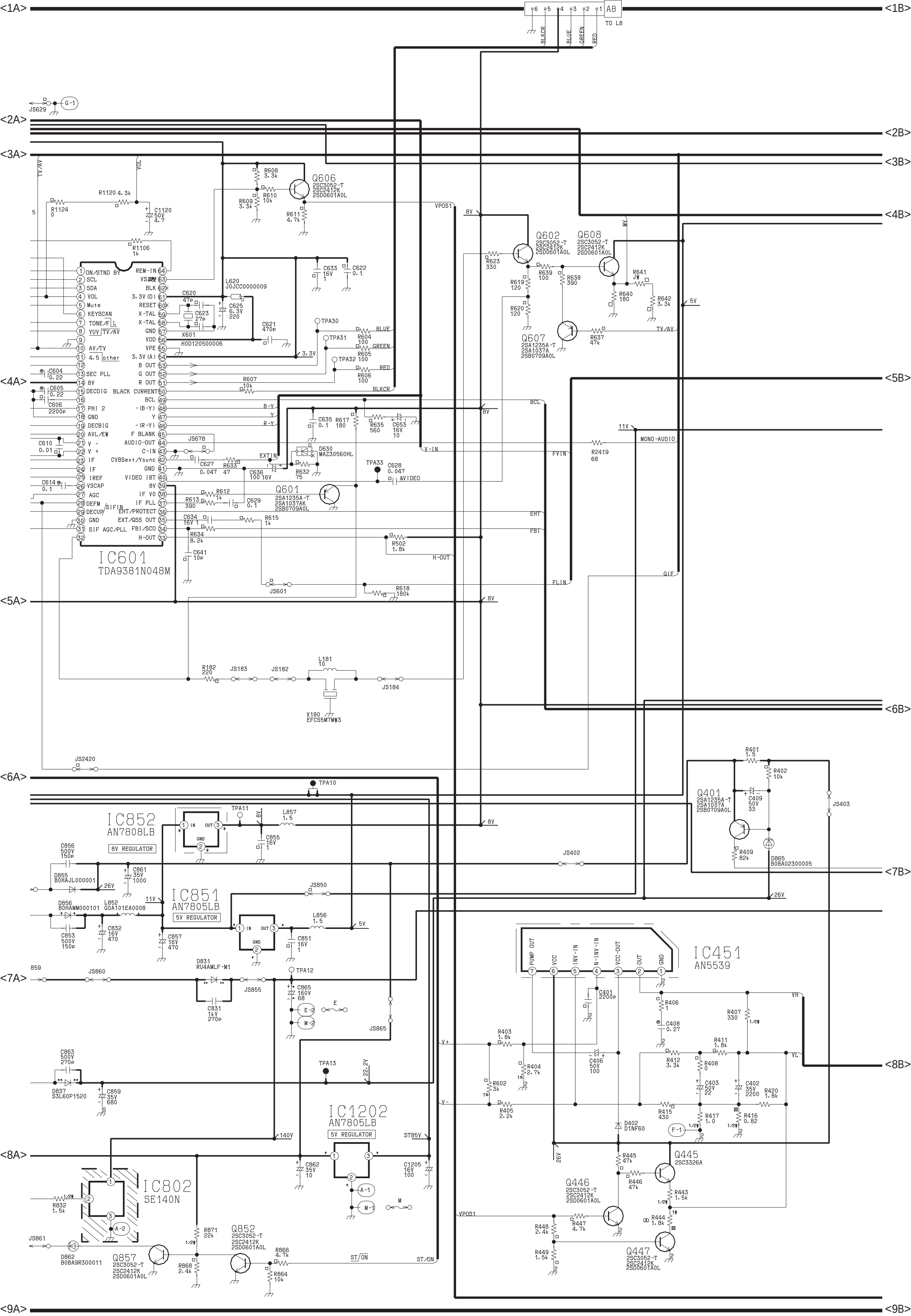
Ref. No.	Part No.	Part Name & Description	Remarks
R2406	ERJ6GEYJ334	M 330KOHM,J,1/10W	
R2410	ERJ6GEYJ473	M 47KOHM,J,1/10W	
R2411	ERJ6GEYJ563	M 56KOHM,J,1/10W	
R2412	ERJ6GEYJ331	M 330OHM,J,1/10W	
R2416	ERJ6GEYJ132	M 1.3KOHM,J,1/10W	
R2417	ERJ6GEYJ273	M 27KOHM,J,1/10W	
R2418	ERJ6GEYJ821	M 820OHM,J,1/10W	
R2419	ERDS2TJ680	C 68OHM,J, 1/4W	
R2421	ERJ6GEYJ332	M 3.3KOHM,J,1/10W	
R3003	ERJ6GEYJ101	M 100OHM,J,1/10W	
R3019	ERJ6GEYJ104	M 100KOHM,J,1/10W	
R3024	ERJ6GEYJ560	M 56OHM,J,1/10W	
R3132	ERJ6GEYJ221	M 220OHM,J,1/10W	
R3133	ERJ6GEYJ221	M 220OHM,J,1/10W	
	CAPACITORS		
C001	ECEA1CKA220	E 22UF, 16V	
C002	ECJ2VF1H104Z	C 0.1UF, Z, 50V	
C005	ECJ2VF1H104Z	C 0.1UF, Z, 50V	
C006	ECA1AM331B	E 330UF, 10V	
C008	ECEA1HKA010	E 1UF, 50V	
C109	ECJ2VF1H103Z	C 0.01UF, Z, 50V	
C117	ECJ2VB1H103J	C 0.01UF, 50V	
C120	ECJ2VF1H103Z	C 0.01UF, Z, 50V	
C121	ECJ2VF1H103Z	C 0.01UF, Z, 50V	
C122	ECJ2VF1H103Z	C 0.01UF, Z, 50V	
C354	ECUX1H330JCX	C 33PF, J, 50V	
C355	ECUX1H330JCX	C 33PF, J, 50V	
C356	ECUX1H330JCX	C 33PF, J, 50V	
C359	ECQM4104KZ	P 0.1UF, K,400V	
C368	ECJ2VC1H561J	C 560PF, J, 50V	
C370	ECKW3D102KBP	C 1000PF, K, 2KV	
C371	ECEA1CN100U	E 10UF, 16V	
C373	ECA2EM100B	E 10UF, 250V	
C377	ECA1CM221B	E 220UF, 16V	
C401	ECJ2VC1H222J	C 2200PF, J, 50V	
C402	ECA1VM222E	E 2200UF, 35V	
C403	ECA1HM220B	E 22UF, 50V	
C406	ECA1HM101B	E 100UF, 50V	
C408	ECQV1H274JL	P 0.27UF, J, 50V	
C813	ECKCNA332MEB	C 3300PF, M,	
C814	ECKR1H471KB5	C 470PF, K, 50V	
C815	ECQB1H392JF	P 3900PF, J, 50V	
C817	ECQU2A224BN9	P 0.22UF, 250V	
C818	ECKCNA331MB7	C 330PF, M,	
C820	ECKW3D122KBP	C 1200PF, K, 2KV	
C821	ECKD3A472KBP	C 4700PF, K, 1KV	
C824	F2B2G221A012	E 220UF, 400V	
C831	ECKR3A271KBP	C 270PF, K, 1KV	
C832	F2A1C471A116	E 470UF, 16V	
C840	ECJ2YB1C474K	C 0.47UF, K, 16V	
C841	ECJ2YB1A824K	C 0.82UF, K,	
C851	ECJ2ZF1C105Z	C 1UF, Z, 16V	
C853	ECKR2H151KB5	C 150PF, K,500V	
C855	ECJ2ZF1C105Z	C 1UF, Z, 16V	

Ref. No.	Part No.	Part Name & Description	Remarks
C856	ECKR2H151KB5	C 150PF, K,500V	
C857	ECA1CM471B	E 470UF, 16V	
C859	F2A1V681A096	E 680UF, 35V	
C861	ECA1VM102B	E 1000UF, 35V	
C862	ECEA1VKA100	E 10UF, 35V	
C863	ECKR2H271KB5	C 270PF, K,500V	
C865	F2A2C680A021	E 68UF, 160V	
C866	ECKW3D221JBP	C 220PF, J, 2KV	
C971	ECJ2VF1H103Z	C 0.01UF, Z, 50V	
C1101	ECJ2VF1H104Z	C 0.1UF, Z, 50V	
C1103	ECJ2VC1H331J	C 330PF, J, 50V	
C1104	ECA1CM101B	E 100UF, 16V	
C1105	ECJ2VF1H104Z	C 0.1UF, Z, 50V	
C1106	ECJ2VF1H104Z	C 0.1UF, Z, 50V	
C1120	ECA1HM4R7B	E 4.7UF, 50V	
C1130	ECJ2VC1H560J	C 56PF, J, 50V	
C1131	ECA0JM221B	E 220UF, 6.3V	
C1132	ECJ2VC1H560J	C 56PF, J, 50V	
C1203	ECJ2VF1H104Z	C 0.1UF, Z, 50V	
C1204	ECEA1CKA101	E 100UF, 16V	
C1205	ECA1CM101B	E 100UF, 16V	
C2301	ECJ2VB1H103K	C 0.01UF, K, 50V	
C2302	ECA1CM100B	E 10UF, 16V	
C2305	ECA1CM100B	E 10UF, 16V	
C2306	ECA1CM470B	E 47UF, 16V	
C2307	ECA1VM102B	E 1000UF, 35V	
C2308	ECJ2VF1H103Z	C 0.01UF, Z, 50V	
C2309	ECA1EM471B	E 470UF, 25V	
C2310	ECQV1H224JL	P 0.22UF, J, 50V	
C2311	ECQV1H224JL	P 0.22UF, J, 50V	
C2312	ECA1VM470B	E 47UF, 35V	
C2313	ECA1HM3R3B	E 3.3UF, 50V	
C2380	ECA1CM101B	E 100UF, 16V	
C2402	ECJ2ZF1C105Z	C 1UF, Z, 16V	
C2403	ECJ2ZF1C105Z	C 1UF, Z, 16V	
C2404	ECJ2VB1E104K	C 0.1UF, K, 25V	
C3016	ECA1CM471B	E 470UF, 16V	
C3024	ECA1HM010B	E 1UF, 50V	
C3111	ECJ2VC1H561K	C 560PF, K, 50V	
C3113	ECJ2VC1H561K	C 560PF, K, 50V	
C3116	ECJ2VB1H103J	C 0.01UF, 50V	
C3117	ECJ2VB1H103J	C 0.01UF, 50V	
	COILS		
L10	K1ZZ00001205	CONNECTOR	
L001	TLTACT100K	PEAKING COIL 10U	
L120	TLTACTR56K	PEAKING COIL	
L181	TLTACT100K	PEAKING COIL 10U	
L352	EXCELSA24T	BEAD CORE	
D865	MTZJ24B	ZENER DIODE	
D1101	MA152KTX	DIODE	
D1102	MTZJ5.6A	ZENER DIODE	
D1104	LNH201RGRF5	LED	
D1105	MTZJ7.5C	ZENER DIODE	
D1130	MTZJ5.6C	ZENER DIODE	

Ref. No.	Part No.	Part Name & Description	Remarks
D1131	MTZJ5.6C	ZENER DIODE	
D1204	MTZJ5.6B	ZENER DIODE	
D2320	MA152KTX	DIODE	
D2380	MA152KTX	DIODE	
D2381	MA152KTX	DIODE	
	INTEGRATED CIRCUITS		
IC351	TDA6107Q/N2	LINEAR IC	
IC451	AN5539	IC	
IC601	TDA9381N048M	IC	
IC801	STRW6654LF02	IC	⚠
IC802	SE140N	LINEAR IC	
IC851	AN7805	LINEAR IC	
IC852	AN7808	LINEAR IC	
IC1103	TVR4GAS112	IC (EEPROM)	
IC1104	B3RAD0000012	REMOTE RECEIVER	
IC1201	PQ1R33	LINEAR IC	
IC1202	AN7805	LINEAR IC	
IC2301	C1BA00000271	LINEAR IC	
	TRANSISTORS		
Q001	2SC2412KT	TRANSISTOR	
Q102	2SC2480TX	TRANSISTOR	
Q369	2SB709ATX	TRANSISTOR	
Q401	2SB709ATX	TRANSISTOR	
Q445	2SC3326ATX	TRANSISTOR	
Q446	2SC2412KT	TRANSISTOR	
Q447	2SC2412KT	TRANSISTOR	
Q501	2SC4212H	TRANSISTOR	
Q520	2SB792ATX	TRANSISTOR	
Q551	2SD2539	TRANSISTOR	
Q601	2SB709ATX	TRANSISTOR	
Q602	2SC2412KT	TRANSISTOR	
Q603	2SB709ATX	TRANSISTOR	
Q605	2SC2412KT	TRANSISTOR	
Q606	2SC2412KT	TRANSISTOR	
Q607	2SB709ATX	TRANSISTOR	
Q608	2SC2412KT	TRANSISTOR	
Q852	2SC2412KT	TRANSISTOR	
Q857	2SC2412KT	TRANSISTOR	
Q1101	2SC2412KT	TRANSISTOR	
Q2320	2SB709ATX	TRANSISTOR	
Q2380	2SC2412KT	TRANSISTOR	
Q2381	2SB709ATX	TRANSISTOR	
Q2401	2SC2412KT	TRANSISTOR	
Q2402	2SC2412KT	TRANSISTOR	
Q2403	2SC2412KT	TRANSISTOR	
Q2404	2SC2412KT	TRANSISTOR	
Q2406	2SC2412KT	TRANSISTOR	
	OTHERS		
A1	TJSF29204	CONNECTOR	
A5	TJS3A9670	6P CONNECTOR	
A8	TJS3A9670	6P CONNECTOR	
A22	TJS3A9650	4P CONNECTOR	
A40	TJS118590	2P CONNECTOR	
A41	TJS118590	2P CONNECTOR	

Ref. No.	Part No.	Part Name & Description	Remarks
F801	XBA2C40TR0	FUSE 250V 4A	⚠
JA1	ERJ6GEY0R00	M 0OHM,J,1/10W	
JA2	ERJ6GEY0R00	M 0OHM,J,1/10W	

7. Schematic Diagram for printing with A4 size.



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JS629
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R1124 0
C1120 50V 4.7
R1106 1k
Q606
2SC3052-T
2SC2412K
2SD0601A0L
R608 3.3k
R609 3.3k
R610 10k
R611 4.7k
VPOS1
ON/STND BY
SCL
SDA
VOL
Mute
KEYSCAN
TONE/F L
YUV TV/AV
AV/TV
4.5 other
SEC PLL
8V
DECDIG
PHI 2
GND
DECBIG
AVL/EW
V -
V +
IF
IREF
VSCAP
AGC
DEFM
DECUP
SIF AGC/PLL
SIFIN
REM-IN
VSYNC
BLK
3.3V(D)
RESET
X-TAL
VDD
VPE
3.3V(A)
B OUT
G OUT
R OUT
BLACK CURRENT
BCL
-(B-Y)
Y
-(R-Y)
F BLANK
AUDIO-OUT
C-IN
CVBSext/Ysync
VIDEO IBT
IF VO
IF PLL
EHT/PROTECT
EXT/QSS OUT
FBI/SCO
H-OUT
IC601
TDA9381N048M
C604 0.22
C605 0.22
C606 2200p
C610 0.01
C614 0.1
L620 J0JCC0000009
C620 47p
C623 27p
C625 6.3V 220
X601 H0D120500006
C621 470p
C633 16V 1
C622 0.1
TPA30
TPA31
TPA32
R604 100
R605 100
R606 100
R607 10k
BLKCR
3.3V
JS678
C627 0.047
R633 47
C636 100 16V
EXTIN
C635 0.1
R617 180
R635 560
C653 16V 10
D630 MAZ30560HL
R632 75
TPA33
C628 0.047
&VIDEO
V-IN
Q601
2SA1235A-T
2SA1037AK
2SB0709A0L
R612 1k
R613 390
C629 0.1
C634 16V 1
R615 1k
R634 8.2k
C641 10p
R502 1.8k
H-OUT
JS601
R618 180k
Q602
2SC3052-T
2SC2412K
2SD0601A0L
Q608
2SC3052-T
2SC2412K
2SD0601A0L
R623 330
R619 120
R620 120
R639 100
R638 390
R641 JW
R640 180
R642 3.3k
5V
Q607
2SA1235A-T
2SA1037A
2SB0709A0L
R637 47k
TV/AV
BCL
11V
MONO-AUDIO
R2419 68
FVIN
EHT
FBI
FLIN
QIF
R182 220
JS183
JS182
L181 10
JS184
X180 EFCS5M7MW3
JS2420
TPA10
IC852
AN7808LB
8V REGULATOR
TPA11
L857 1.5
C855 16V 1
C856 500V 150p
D855 B0HAJL000001
C861 35V 1000
26V
JS402
IC851
AN7805LB
5V REGULATOR
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L852 G0A101EA0008
C853 500V 150p
C832 16V 470
C857 16V 470
JS850
L856 1.5
C851 16V 1
859
JS860
D831 RU4AMLF-M1
C831 1kV 270p
JS855
TPA12
C865 160V 68
E-2
M-2
E
JS865
C863 500V 270p
D837 S3L60P1520
C859 35V 680
TPA13
22.2V
140V
IC1202
AN7805LB
5V REGULATOR
STB5V
C862 35V 10
C1205 16V 100
A-1
M-1
M
IC802
SE140N
R832 1.5k
A-2
JS861
D862 B0BA9R300011
Q857
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R868 2.4k
Q852
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2SC2412K
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R866 4.7k
R864 10k
ST/ON
R401 1.5
R402 10k
Q401
2SA1235A-T
2SA1037A
2SB0709A0L
C409 50V 33
JS403
R409 82k
D865 B0BA02300005
IC451
AN5539
PUMP OUT
VCC
INV-IN
N-INV-IN
VCC-OUT
OUT
GND
C401 2200p
R406 1
C408 0.27
R407 330
VH
R403 1.8k
R404 2.7k
R602 3k
R405 2.2k
C406 50V 100
R412 3.3k
R411 1.8k
R408 0
C403 50V 22
C402 35V 2200
R420 1.8k
VL
R415 430
R417 1.0
R416 0.82
D402 D1NF60
F-1
Q445
2SC3326A
R445 47k
R446 47k
R443 1.5k
Q446
2SC3052-T
2SC2412K
2SD0601A0L
R447 4.7k
R448 2.4k
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R444 1.8k
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2SC2412K
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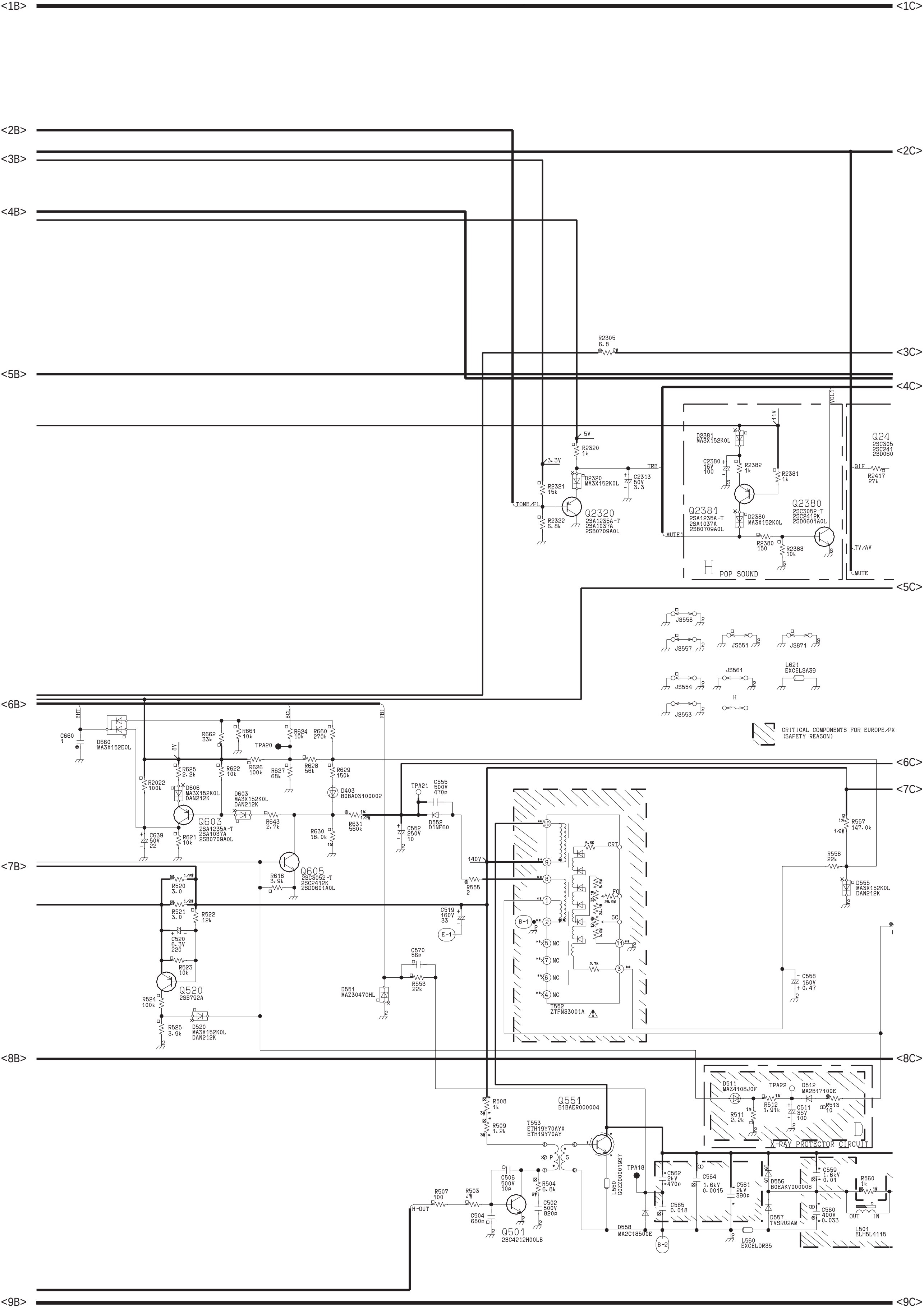
V+
V-



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5V
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3.3V
D2320 MA3X152K0L
C2313 50V 3.3
TRE
R2321 15k
TONE/FL
Q2320 2SA1235A-T 2SA1037A 2SB0709A0L
R2322 6.8k
11V
VOL1
D2381 MA3X152K0L
C2380 16V 100
R2382 1k
R2381 1k
Q2381 2SA1235A-T 2SA1037A 2SB0709A0L
D2380 MA3X152K0L
Q2380 2SC3052-T 2SC2412K 2SD0601A0L
MUTE1
R2380 150
R2383 10k
H POP SOUND
Q24 2SC305 2SC241 2SD060
QIF
R2417 27k
TV/AV
MUTE
JS558
JS557
JS551
JS871
JS554
JS561
L621 EXCELSA39
JS553
H
CRITICAL COMPONENTS FOR EUROPE/PX (SAFETY REASON)
EHT
C660 1
D660 MA3X152E0L
R662 33k
R661 10k
BCL
R624 10k
R660 270k
TPA20
FBL
8V
R625 2.2k
R622 10k
R626 100k
R627 68k
R628 56k
R629 150k
R2022 100k
D606 MA3X152K0L DAN212K
D603 MA3X152K0L DAN212K
D403 B0BA03100002
TPA21
C555 500V 470p
Q603 2SA1235A-T 2SA1037A 2SB0709A0L
R643 2.7k
R630 18.0k
R631 560k
D552 D1NF60
C552 250V 10
C639 50V 22
R621 10k
R520 3.0
R521 3.0
R522 12k
R616 3.9k
Q605 2SC3052-T 2SC2412K 2SD0601A0L
140V
R555 2
C519 160V 33
E-1
C520 6.3V 220
R523 10k
Q520 2SB792A
R524 100k
C570 56p
R553 22k
D551 MAZ30470HL
D520 MA3X152K0L DAN212K
R525 3.9k
CRT
FO
SC
B-1
NC
T552 ZTFN33001A
R557 147.0k
R558 22k
D555 MA3X152K0L DAN212K
C558 160V 0.47
D511 MAZ4108J0F
TPA22
D512 MA2B17100E
R512 1.91k
R513 10
R511 2.2k
C511 35V 100
X-RAY PROTECTOR CIRCUIT
D
R508 1k
R509 1.2k
Q551 B1BAER000004
T553 ETH19Y70AYX ETH19Y70AY
P
S
L550 G0ZZ00001937
TPA18
C562 2kV 470p
C564 1.6kV 0.0015
C561 2kV 390p
D556 B0EAKV000008
C559 1.6kV 0.01
R560 1k
C506 500V 10p
R504 6.8k
C502 500V 820p
R507 100
R503 JW
H-OUT
C504 680p
Q501 2SC4212H00LB
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B-2
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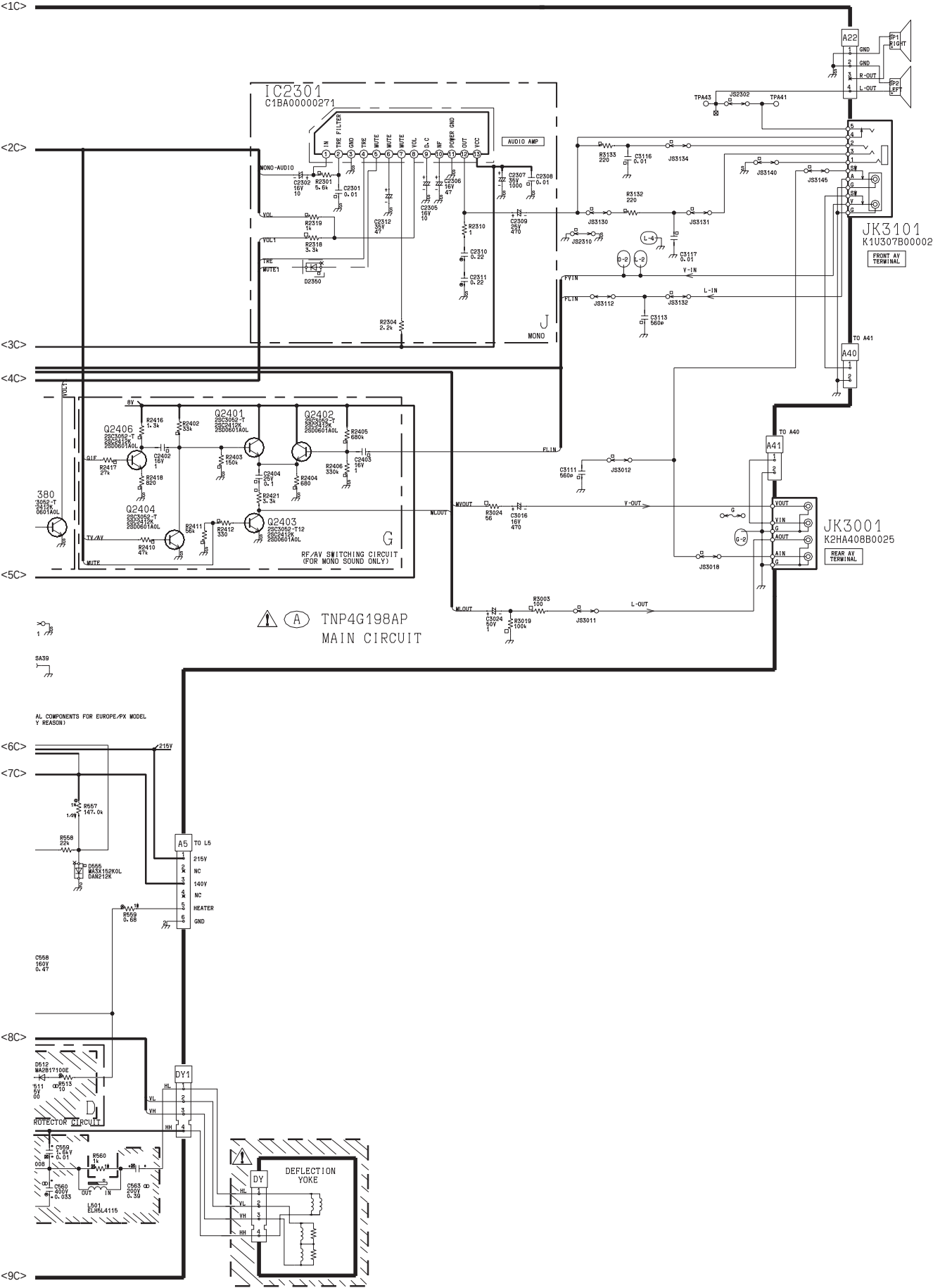
OUT IN
L501 ELH5L4115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MONO-AUDIO
MONO
A22
GND
GND
R-OUT
L-OUT
SP1 RIGHT
SP2 LEFT
JK3101
K1U307B00002
FRONT AV TERMINAL
JK3001
K2HA408B0025
REAR AV TERMINAL
TO A40
TO A41
TO L5
Q2401
Q2402
Q2403
Q2404
Q2406
RF/AV SWITCHING CIRCUIT
(FOR MONO SOUND ONLY)
TNP4G198AP
MAIN CIRCUIT
DEFLECTION YOKE
ROTECTOR CIRCUIT
AL COMPONENTS FOR EUROPE/PX MODEL
Y REASON)
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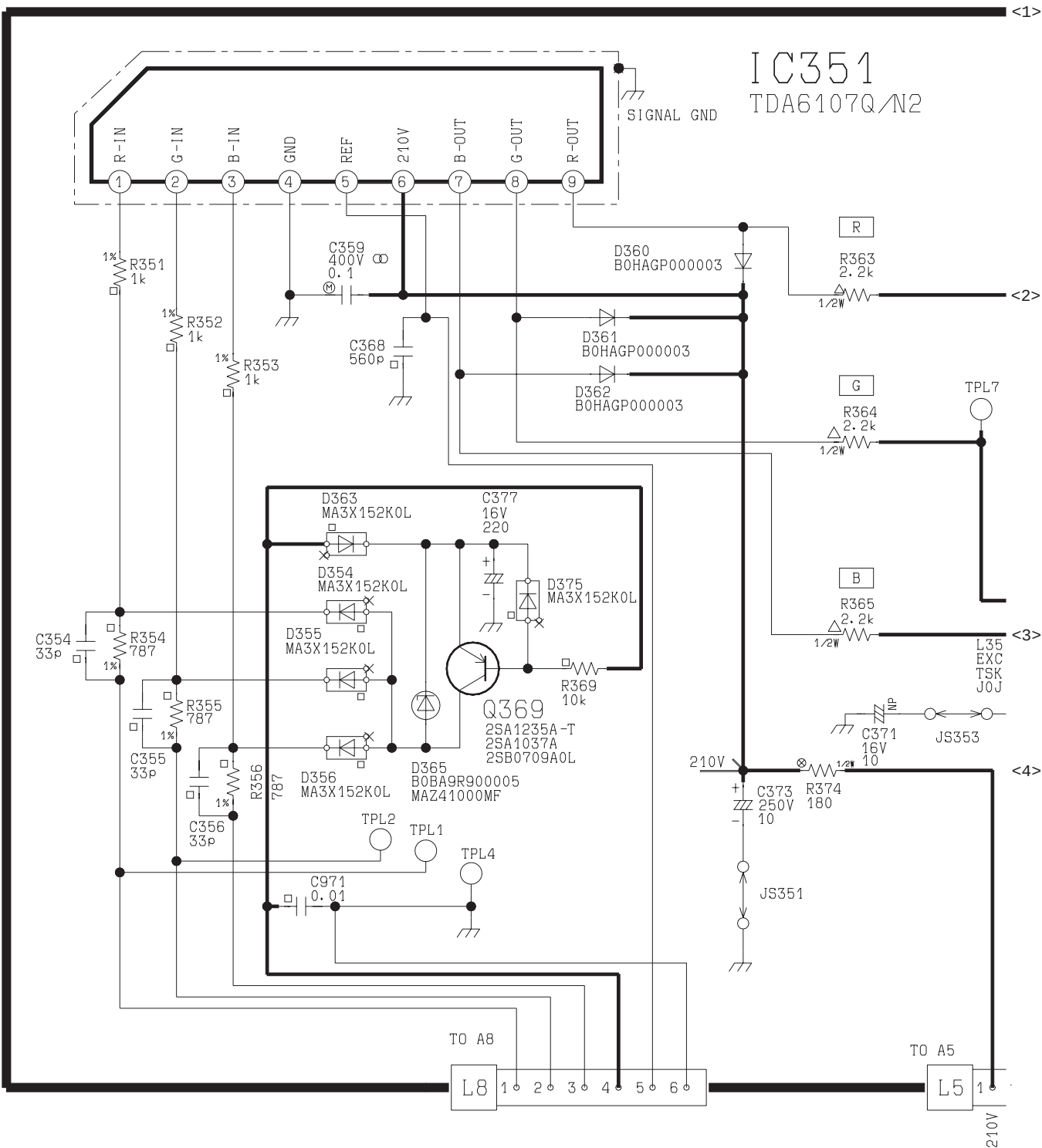
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SIGNAL GND
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G-IN
B-IN
GND
REF
210V
B-OUT
G-OUT
R-OUT
1
2
3
4
5
6
7
8
9
R351
1k
R352
1k
R353
1k
C359
400V
0.1
C368
560p
D360
B0HAGP000003
D361
B0HAGP000003
D362
B0HAGP000003
R
R363
2.2k
1/2W
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2.2k
1/2W
TPL7
B
R365
2.2k
1/2W
L35
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TSK
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16V
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D375
MA3X152K0L
C354
33p
R354
787
R355
787
C355
33p
R356
787
C356
33p
Q369
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2SA1037A
2SB0709A0L
R369
10k
D365
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MAZ41000MF
TPL2
TPL1
TPL4
C971
0.01
C371
16V
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210V
C373
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10
R374
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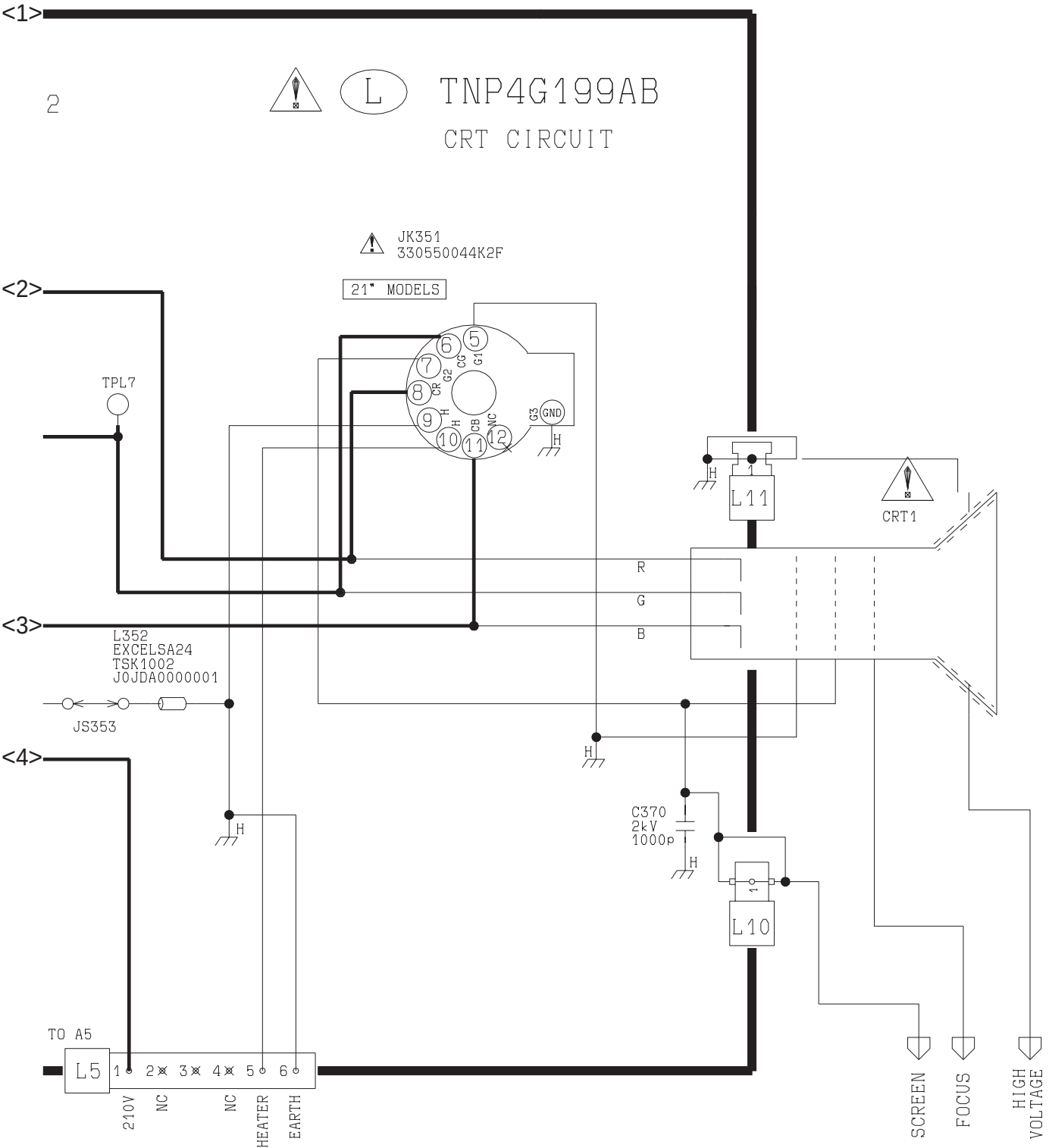
JS351
TO A8
L8
TO A5
L5
210V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CRT CIRCUIT
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21" MODELS
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L352
EXCELSA24
TSK1002
J0JDA0000001
JS353
L11
CRT1
L10
C370
2kV
1000p
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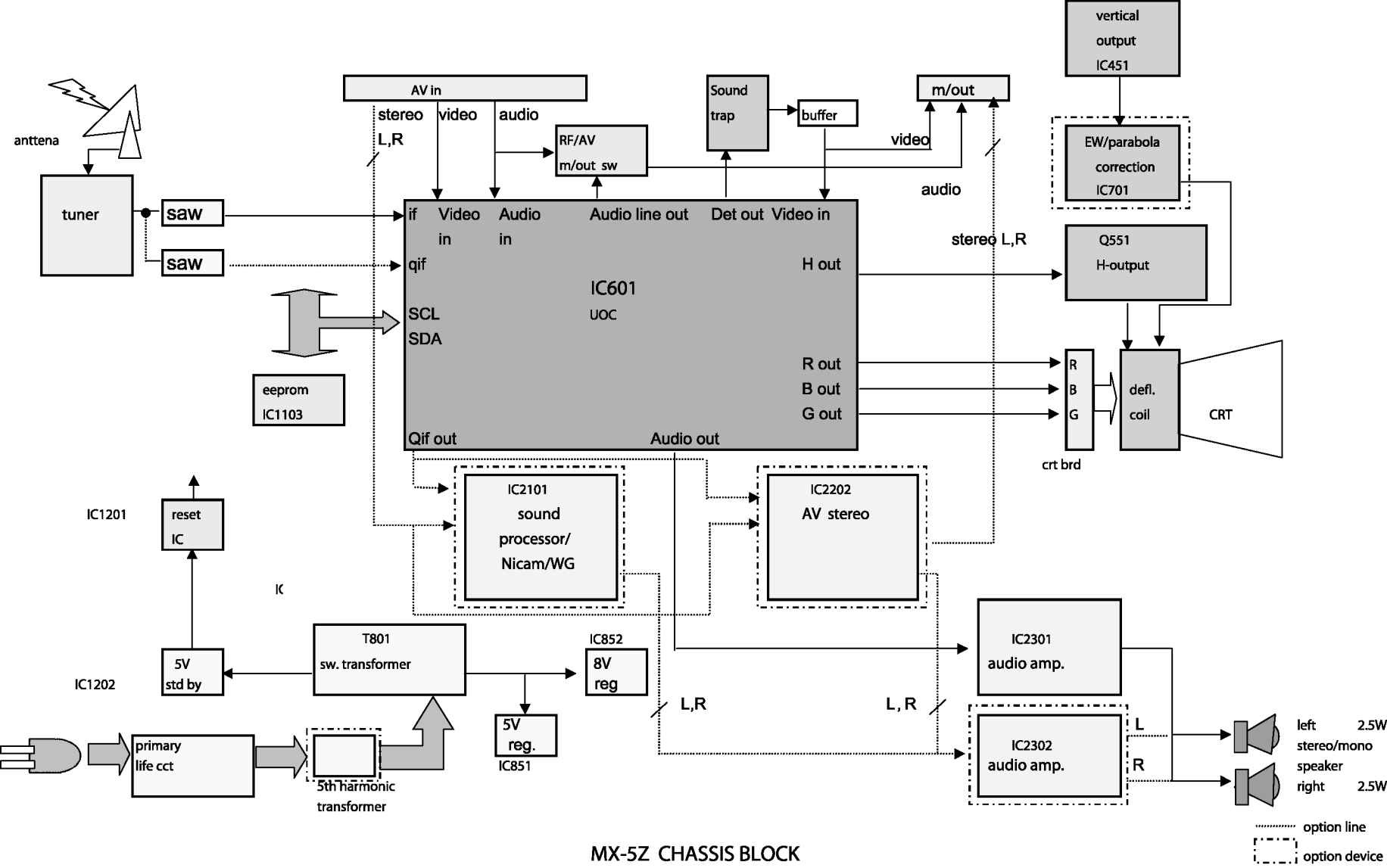
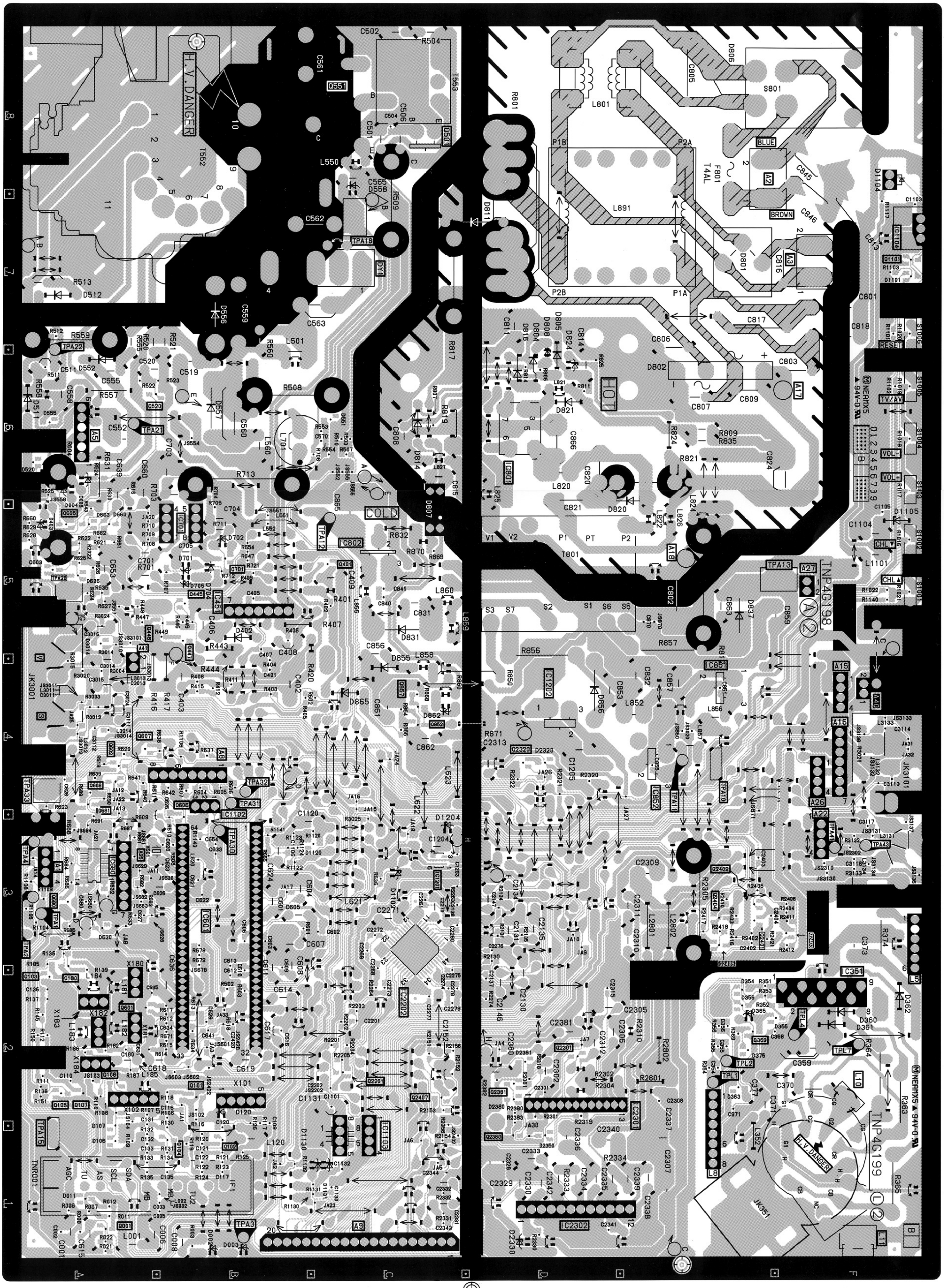
G
B
TO A5
L5
210V
NC
NC
HEATER
EARTH
SCREEN
FOCUS
HIGH VOLTAGE



MX-5Z CHASSIS BLOCK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HOT
COLD
BLUE
BROWN
RESET
TV/AV
VOL-
VOL+
CHL▼
CHL▲
TNP4G198
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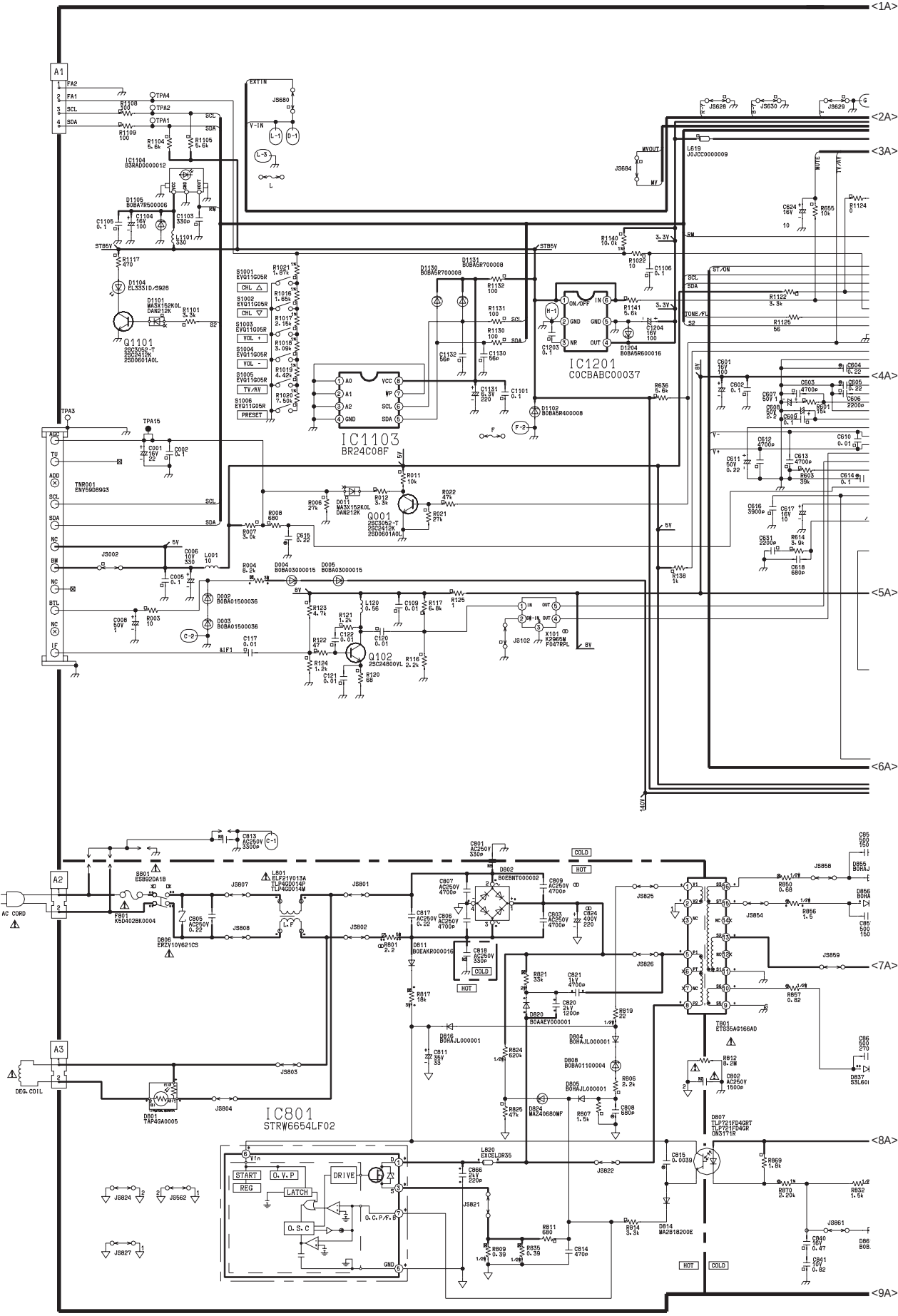
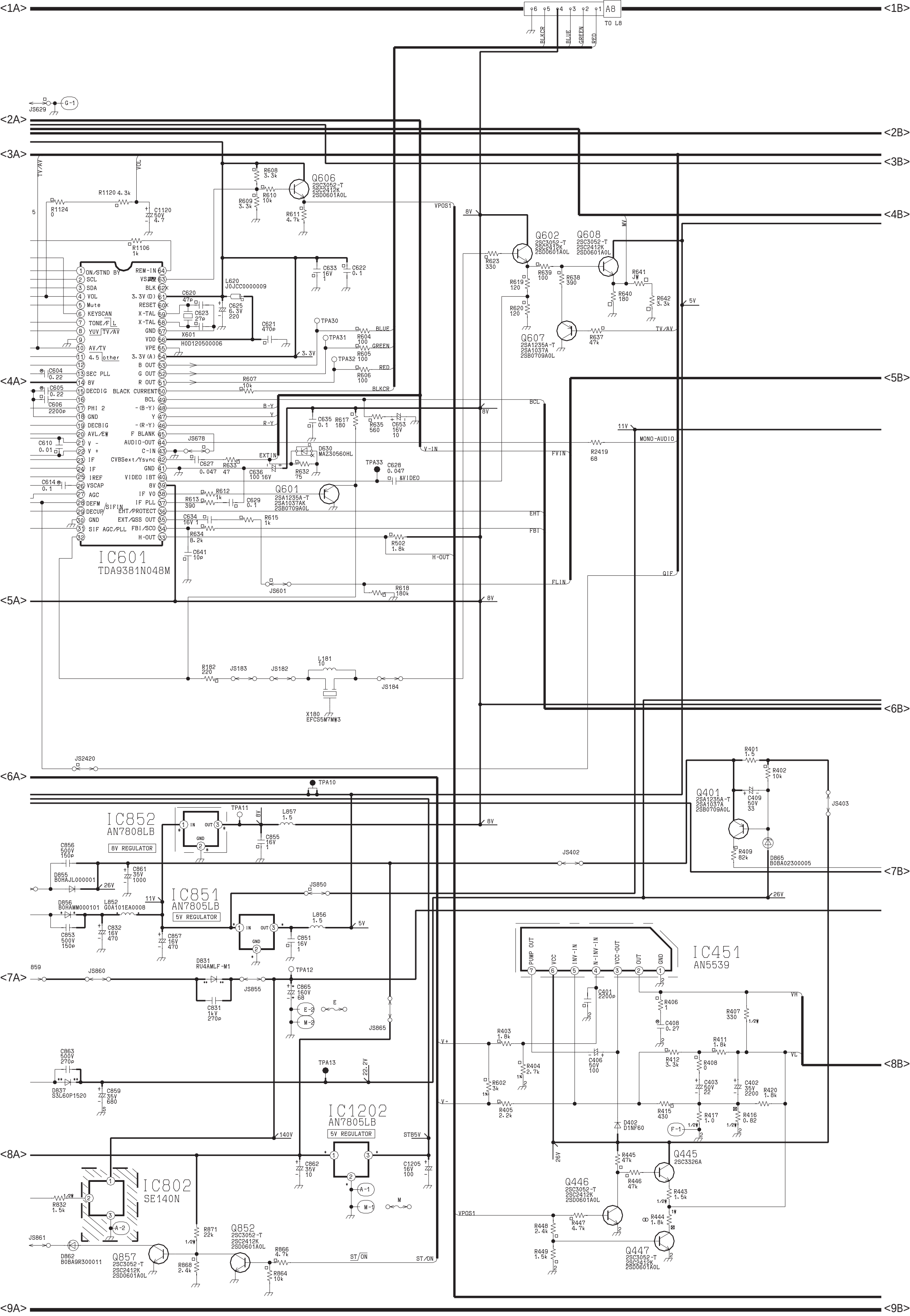
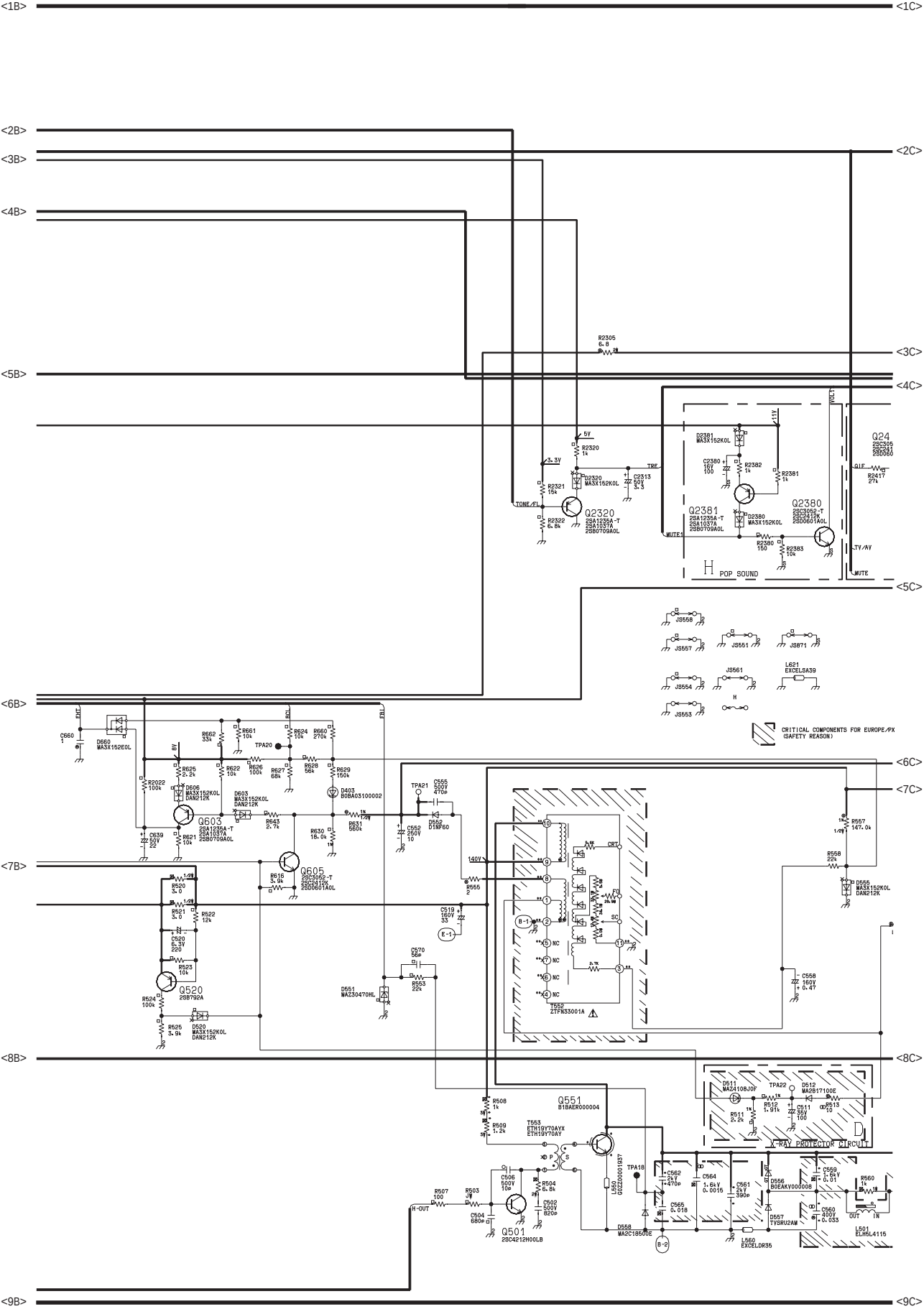
NERMX5 94V-0



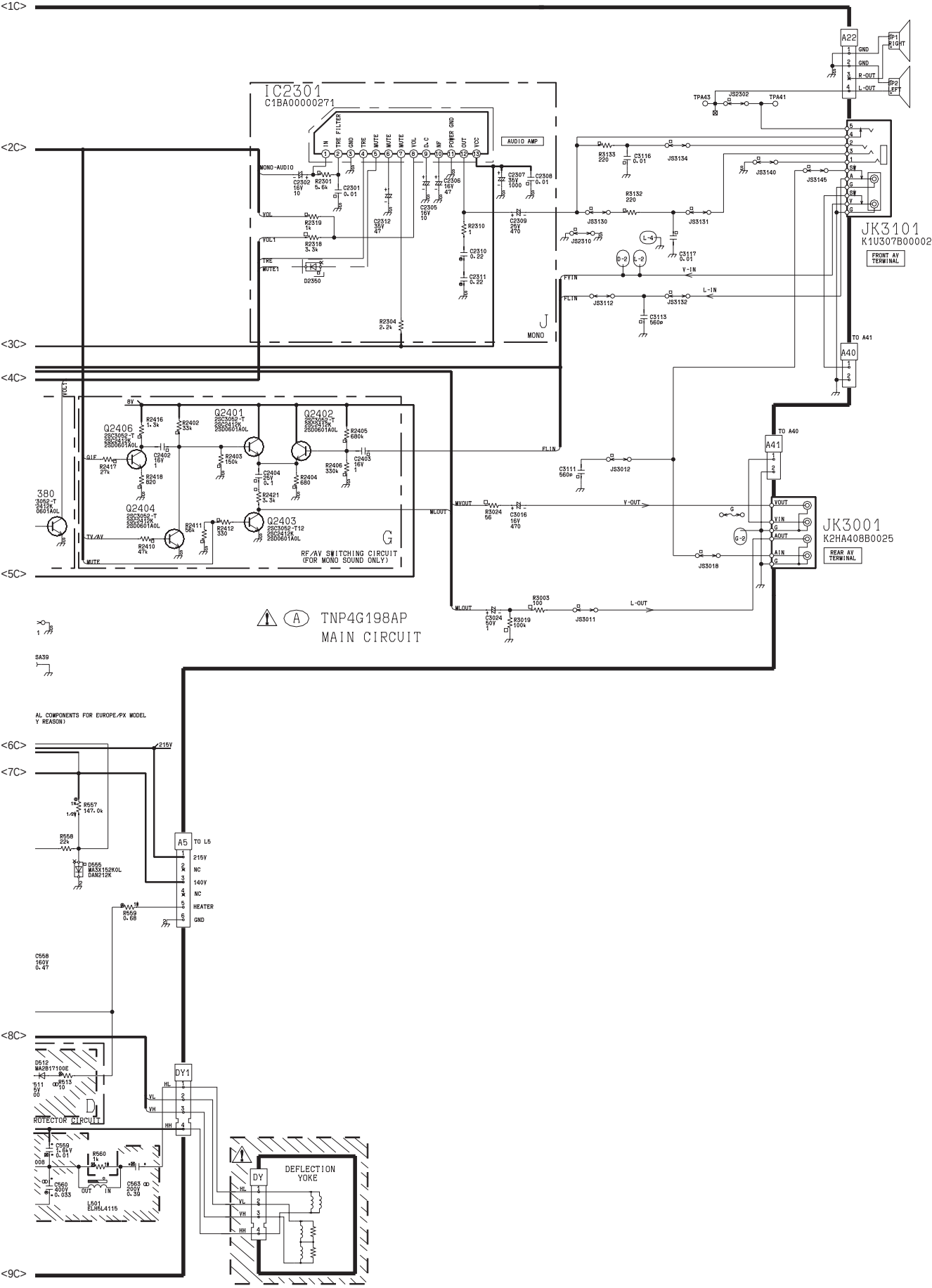
TC-21S15MQ A-Board (1 of 4) Schematic Diagram



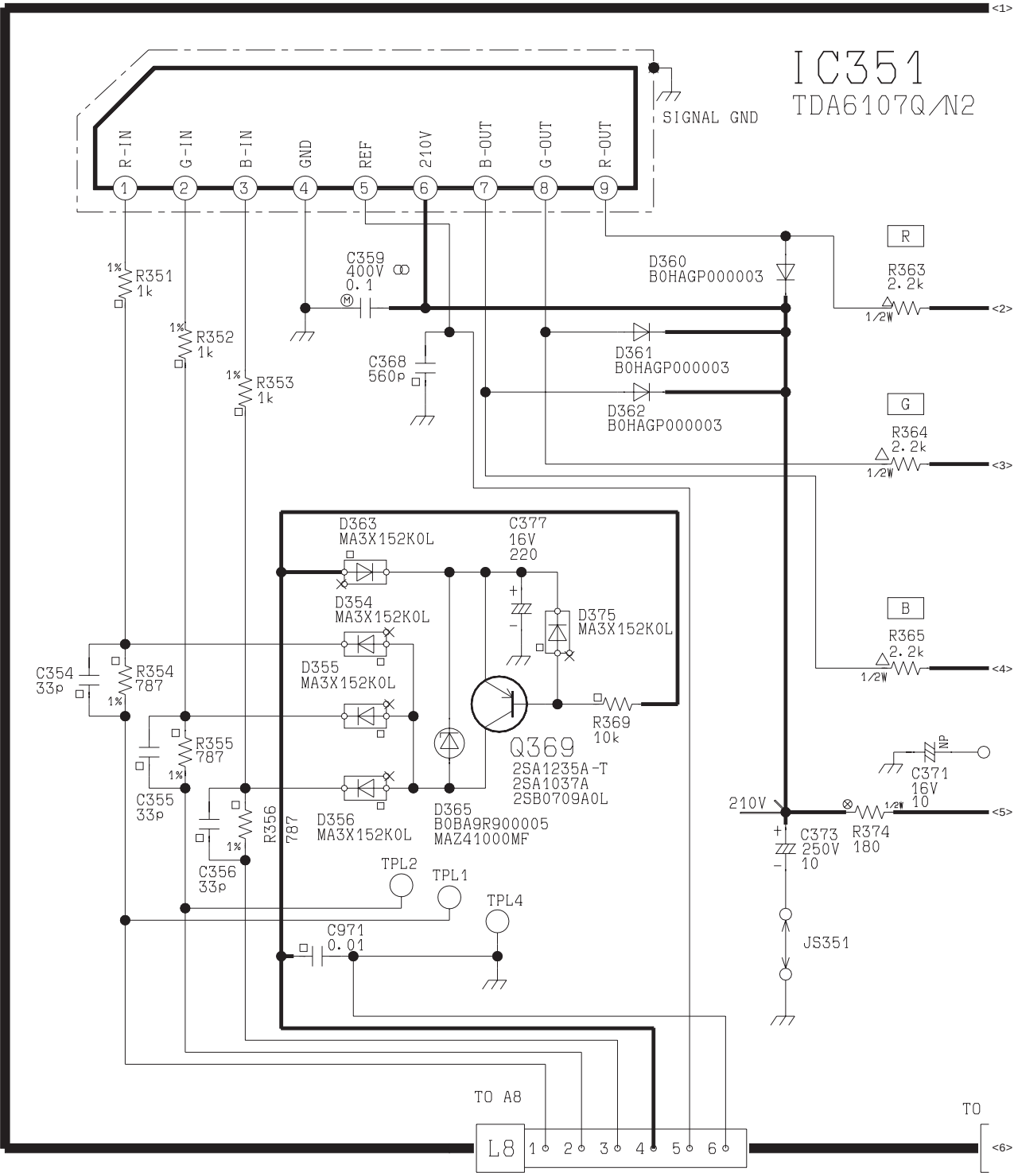
TC-21S15MQ A-Board (2 of 4) Schematic Diagram



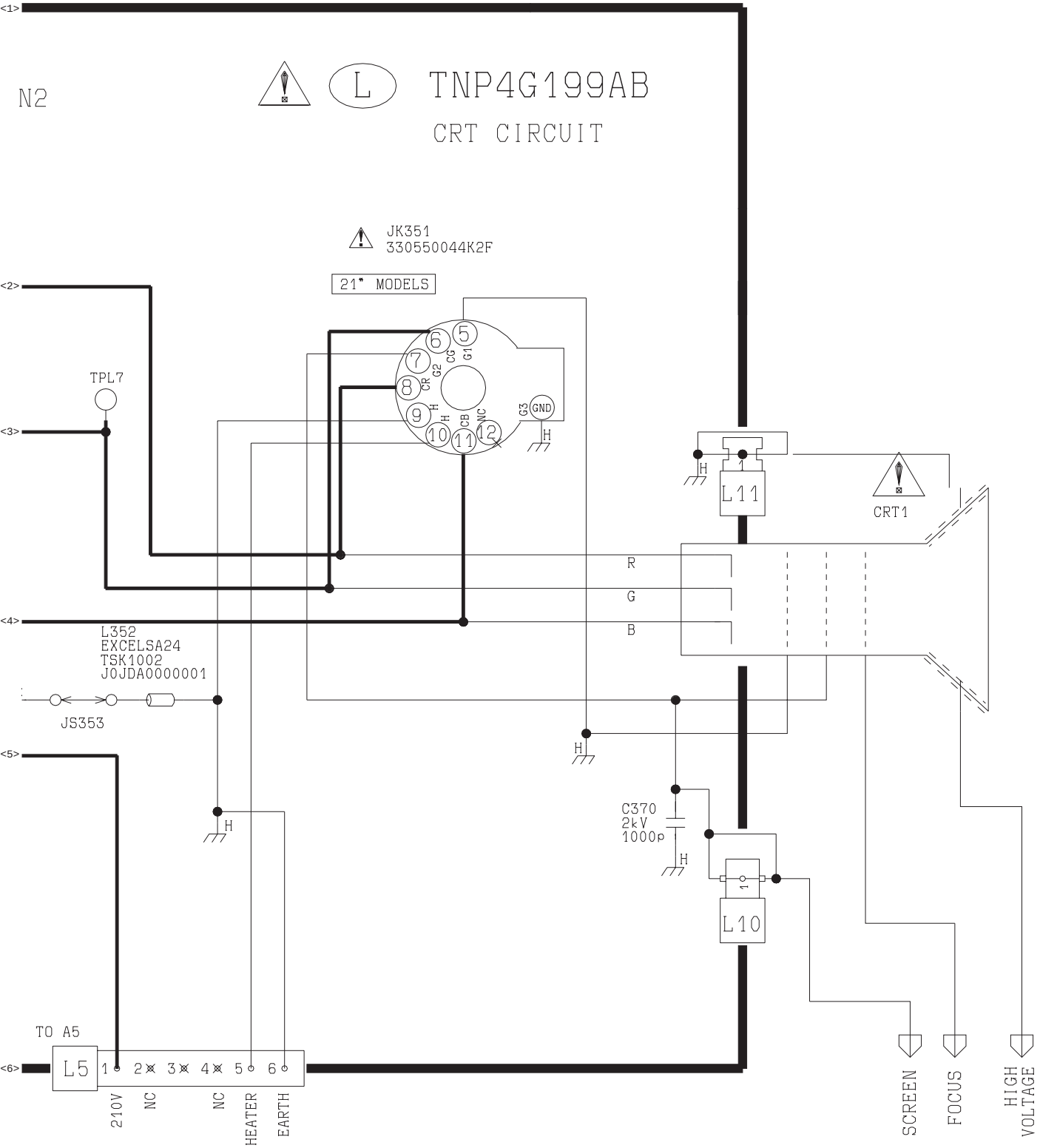
TC-21S15MQ A-Board (3 of 4) Schematic Diagram



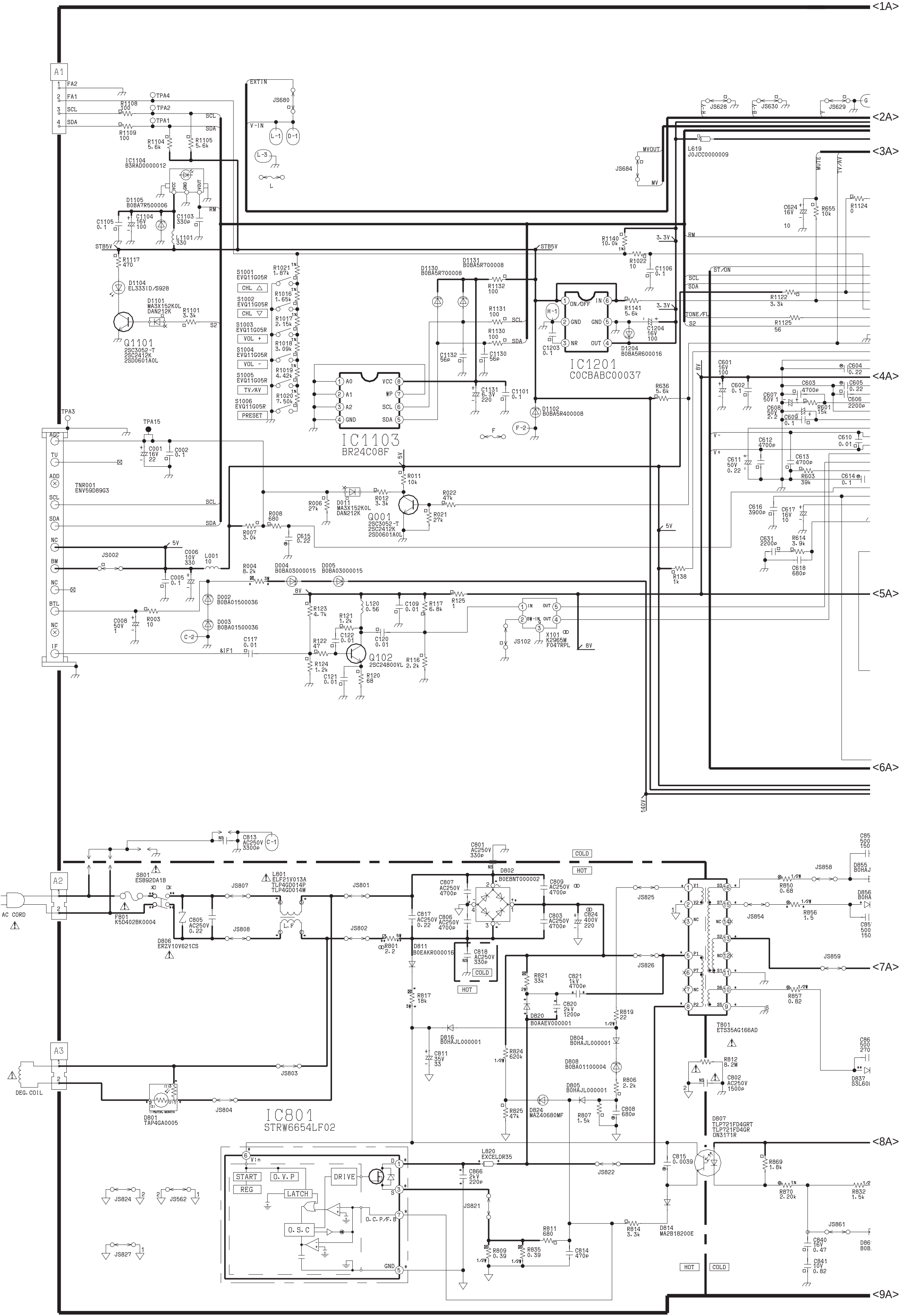
TC-21S15MQ A-Board (4 of 4) Schematic Diagram



TC-21S15MQ L-Board (1 of 2) Schematic Diagram



TC-21S15MQ L-Board (2 of 2) Schematic Diagram



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REG
O.V.P
LATCH
DRIVE
O.S.C
COLD
HOT